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For discussion and recommendations

Item III (e) of the Provisional Agenda

EXCHANGE AND SHARING OF ECONOMIC DATA
Progress Report of the Task Force

The paper describes the progress of work of the UNECE Task Force on the exchange and sharing of economic data. The paper shares the first findings of the Task Force and raises issues for discussion by the Bureau related to advancing national and international data exchange to ensure the high quality of macro-economic accounts. The paper presents the feedback received from a number of consultations conducted by the Task Force in section III, planned next steps in section V and issues for discussion by the CES Bureau in section VI. The first substantive findings are presented in Annexes I and II of this report.

The Bureau is invited to comment on the progress achieved and advise the Task Force on its further work.

FACE TO FACE MEETING OF THE TASK FORCE ON EXCHANGE AND SHARING OF ECONOMIC DATA, 11-12 APRIL 2018

Legal Aspects	*page n°5-7 (§23-§28); and page n°27-29 (§1-§11)*
Team C1 results	*page n°24-25 (§56-§60)*
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I. BACKGROUND

1. Many statistical offices are considering how to exchange data more effectively, especially on the large and complex multinational enterprises (MNEs). New data exchange mechanisms are needed, nationally and internationally, to enhance the quality, coherence and relevance of economic statistics and the efficiency of their production. Without a full picture of MNEs' activities, it is a challenge to ensure continued meaningful and correct measurement of global production and trade, and to understand the influence of MNEs on macro-economic and business statistics. There is an urgent need to analyse the risks and obstacles of data exchange and identify enablers that will lead to an increase in the sharing of economic data (including information on business structures) in statistical production.

2. The *Guide to Measuring Global Production*[1] (2015) identifies as a priority the need to develop new methods and sources for collecting and compiling statistics on the largest and most complex MNEs in a consistent and effective way. The Guide also notes the limits of national and international data sharing among producers of official statistics due to legal and confidentiality constraints, which in many cases seem to hamper the possibilities to improve the analysis of MNEs.

3. The 2015 and 2016 meetings of the joint UNECE/Eurostat/OECD Group of Experts on National Accounts recognized that data exchange is essential when looking for solutions to the challenges related to global production, and asked international organizations to consider ways to facilitate exchange and sharing of economic data. Countries emphasized the need for data confrontation and exchange between the producers of economic statistics within a country and between countries to enable proper data validation and improve quality, relevance and consistency of data across domains. Globalization requires statistical agencies to understand the significance of counterparty information to view both sides of the transaction. National circumstances, legal and technological challenges will need to be considered as well as possible risks, for example related to production processes of statistics, trust of respondents and the general public, and privacy issues.

4. In view of these developments, the Bureau of the Conference of European Statisticians (CES) carried out an in-depth review of the exchange and sharing of economic data in October 2016. As an outcome of the review, the Bureau emphasized that national and international data exchange is a prerequisite for statisticians to be able to depict economic reality, profile multinational enterprises and provide meaningful data on their activities. The Bureau stressed the urgent need to operationalize the exchange of data between national statistical offices (NSOs), and established a Task Force on exchange and sharing of economic data in February 2017 to facilitate progress in this area.

II. OBJECTIVE AND WORK PLAN OF THE TASK FORCE

5. According to its terms of reference (ECE/CES/BUR/2017/FEB/4), the Task Force was established under the CES Steering Group on National Accounts for three years, until June 2020, after which it will submit a final report.

6. The Task Force will work in stages to share the results early in its mandate.

7. At the first stage (until June 2018) the Task Force will analyse concrete examples of data exchange, and identify through these examples enablers and obstacles of data sharing and review the practical requirements of data exchange. **Annexes I and II of this report inform the Bureau of the initial findings of the first stage of work.**

8. At the second stage (July 2018 – June 2020), the Task Force will develop guidance, tools and principles to facilitate the exchange of economic data. The guidance will also highlight innovative ways to exchange economic data to increase the quality, coherence and granularity of statistics and the ability to better analyse the activities of MNEs.

9. The Task Force based its work plan on the terms of reference (ECE/CES/BUR/2017/FEB/4/Rev.1), paragraph 11, points a) to c) and decided to split the first stage into four tasks when preparing the work plan as indicated below:

[1] https://www.unece.org/fileadmin/DAM/stats/publications/2015/Guide_to_Measuring_Global_Production__2015_.pdf

- Task A - Review concrete examples of useful data exchange (Lead: Finland)
- Task B - Identify enablers and obstacles and propose practical options (Lead: Canada)
- Task C1- Find ways to describe MNEs and changes in their structures (Lead: United States)
- Task C2 - Large Cases Units in Statistical Institutes (Lead: Ireland – planned for spring 2018)

10. Currently, the following countries and international organizations participate in the Task Force: Canada, Denmark, Finland (Chair), Italy, Ireland, Mexico, the Netherlands, United Kingdom, United States, European Central Bank (ECB), Eurostat, the International Monetary Fund (IMF), The Organisation for Economic Co-operation and Development (OECD), UNECE, the United Nations Statistics Division (UNSD) and World Trade Organization (WTO).

11. The Task Force involves experts on national accounts and balance of payments as well as business statistics, foreign trade and other related economic statistics. UNECE acts as Secretariat of the Task Force.

III. CONSULTATIONS CONDUCTED BY THE TASK FORCE

UNECE/Eurostat/OECD Group of Experts on National Accounts

12. As a first activity, the Task Force organized a session on data exchange and confrontation at the joint UNECE/Eurostat/OECD Group of Experts on National Accounts meeting on 31 May – 2 June 2017.

13. The discussions in this session centred on the in-depth review and the survey of countries' experience with micro and macro data sharing, prepared by Finland and UNECE. The session also provided information on current work of Canada, Eurostat, IMF and OECD.

14. Participants advised the newly established UNECE Task Force on exchange and sharing of economic data on priorities. They emphasized that it is urgent to advance data exchange and that the Task Force should structure its work in such a way that it provides concrete, implementable solutions to the problems of data sharing. The Group of Expert also advised the Task Force to:

- Report to the Group of Experts on National Accounts on an annual basis;
- Review the possibility to develop common guidance, tools and secure platforms for data exchange;
- Analyse and share good examples of successful data exchange;
- Focus on guidance and tools for reconciliation of MNEs' data;
- Consider what can be done already within the current legal frameworks.

15. However, any real progress in data sharing will require a cultural change in statistical organizations. In order to invoke this cultural change, support at the highest level is required. Therefore the meeting asked the Task Force to brief Chief Statisticians about the objectives of this work and keep them informed of the progress achieved.

Conference of European Statisticians

16. The CES Bureau recommended that the topic of exchange and sharing of economic data be discussed at the CES plenary session on 19-21 June 2017 to seek feedback from a wider group of countries. The CES plenary session made the following points for consideration by the Task Force:

- The purpose of data sharing should be clearly identified to ensure acceptance of data sharing and develop a feasible solution;
- National accountants need to have access to all the data required for a complete and accurate picture of the activities of MNEs within the national borders. The first priority is to compile nationally consistent data on large MNEs across statistical domains. Sharing inconsistent data may create confusion instead of solving discrepancies;
- There is a great value in sharing data even at the aggregated level. However, statistical offices need to find solutions for sharing granular data as long as confidentiality and trust of respondents can be guaranteed. Policy makers ask for data that are more granular. If official statistics are not able to provide the detail, they will use data from other sources;
- Innovative solutions, where the data are collected in a consistent manner once and then used for different purposes, need to be developed. Bringing together legal experts, IT-experts and statisticians may help to advance this work;
- Pilot exercises could help identifying which data should be shared internationally and how it can be done in practice;
- Visiting companies can help to resolve inconsistencies between data from different sources. Company visits may also allow to access data that do not necessarily exist nationally but have to be retrieved from other parts of the MNE.

17. The Conference agreed that establishing special units on large and complex enterprises at national statistical offices is a prerequisite for having consistent data. The Conference expressed support for creating an international network of experts dealing with such enterprises' data.

18. The Conference emphasized the urgent need for and importance of sharing data to improve quality of statistics while fully respecting the confidentiality of respondents' data. The Conference welcomed the establishment of the Task Force, and underlined the need to utilize the advantages of working in collaboration with other international and national organizations. The Conference asked the Task Force to report to the Conference early in its mandate to support statistical offices in addressing asymmetries in cross-border flows arising from the globalization of production, trade and financing. The Conference asked the Task Force to develop innovative ways of data exchange and pilot test how these could work in practice.

United Nations Advisory Expert Group on National Accounts

19. The Task Force shared the initial findings of its work and brought issues for discussion to the Advisory Expert Group (AEG) on National Accounts, on 5-7 December 2017 in New York. At the meeting, AEG welcomed the work of the Task Force and recognized its critical importance for understanding the activities of MNEs, reconciling bilateral asymmetries and issues related to globalization more generally.

20. Further, AEG recognized the legal and confidentiality constraints in exchanging micro-data and the need to rethink the principle of confidentiality in an environment where micro-data may already be publicly available, and made the following points:

- European legislation accommodates for the possibility of transmission of confidential data both within the European Statistical System (ESS) and the European System of Central Banks (ESCB). However, in some countries the national legislation prohibits such data exchange.
- Fundamental international cultural change is needed. We need to accept more risks, and review the national laws and see how far we can stretch them.
- Some of the data that the statistical offices consider confidential are already available in the newspapers etc. If we do not exchange it among NSOs and Central Banks (CBs), someone else will do it.
- Encouraged the establishment of large case units (LCU) in countries where MNEs are significant and called for the development of global business registers.
- The ultimate aim should be to establish an internationally coordinated MNE data network.
- It is not always clear to MNEs how to report their data for national statistics, this concerns especially Intellectual Property Products (IPP).
- Improving cooperation with the biggest enterprises could be a key for successful data sharing.
- Data exchange is a very delicate issue for many MNEs.

21. AEG acknowledged work being done by OECD in addressing trade asymmetries and related work on similar issues by Eurostat and UN and stressed the importance to coordinate the various work streams to avoid duplication. AEG made the following suggestions with respect to related international work:

- Review again the main outcomes of the thematic workshop on data sharing, organized by IMF and Eurostat, and refer to them.
- The work on common identifiers and global groups register are important initiatives to follow.
- The European Statistical System network (ESSnet) on international profiling is a good example of successful work.
- Data sharing should include commercial data.
- Learn from Extractive Industries Transparency Initiative (EITI).
- OECD work on base erosion and profit shifting (BEPS) is important. Consider how NSOs could be more involved in this work?
- Possibilities to use data from chambers of commerce could be investigated.
- Review the example of the Channel Tunnel cooperation between the United Kingdom, France and Belgium.
- The European Union (EU) Early Warning System includes some data exchange on a voluntary basis.
- Data sharing facilitated by OECD in its Working Groups' meetings could be systematized.
- Draft Chapter 12 of the Handbook on Accounting for Global Value Chains should be circulated for comments to all Task Force members.

22. AEG encouraged the Task Force to continue advancing research in this area and share the outcomes with AEG, and noted that:

- The Task Force should consider how to operationalize data sharing.
- While legal barriers exist, the technology for data exchange is available.
- International organizations should facilitate the work.

CES Task Force on common elements of statistical legislation

23. One way to address the legal obstacles associated with data exchange is to help countries draft legislation that facilitates data exchange. The Task Force had a unique opportunity to engage with the UNECE Task Force on Common Elements of Statistical Legislation (co-chaired by Latvia and the United Kingdom) as they worked at the same time to draft the guidance for all statistical offices and also touched upon data exchange. The Task Force on exchange and sharing of economic data provided views on how to enable secure data exchange for statistical purposes between statistical producers and with international organizations both nationally and internationally.

24. The draft Guidance on statistical legislation already included elements that enable the exchange of confidential micro-data within the national statistical system, and elements that enable the access of producers of official statistics to private and public data sources, if needed for statistical purposes.

25. Further, the Task Force on exchange and sharing of economic data made the following proposals relating to the guidance on statistical legislation:

- It would be useful to consider an exemption to data confidentiality to allow such unit level data which are made publicly available by the respondent itself, directly or indirectly, to be considered non-confidential. This could include data published through annual or quarterly reports, if they meet the statistical definitions. These data could then also be exchanged freely among producers of official statistics.

- It would be useful to add a common element on the exchange of individual data with other countries' national statistical offices and possibly with their other producers of official statistics. Exchange of individual data, including identifiers, with foreign producers of official statistics may take place exclusively for statistical purposes in the respective area of competence of each producer, and provided that this transmission is necessary for the efficient development, production and dissemination of official statistics or for increasing the quality of official statistics. Each such transmission shall be authorized by the Chief Statistician of both countries and the conditions shall be documented in a mutually signed agreement. The responsibility lies with each office allowing the exchange of their data.

- "Use for statistical purposes" should be defined as the exclusive use of data for the development, quality improvement and production of official statistics, statistical analyses and statistical services, including all activities regulated by the present Law. Mentioning quality improvement would be important as it is a key justification for engaging in data exchange.

26. The Task Force on exchange and sharing of economic data also noted that ideally the international community would work towards having global unique identifiers for statistical

units which would match with the current reality of businesses that operate across national borders. At this stage, this issue was merely flagged as an idea for future strategic development of international statistics.

27. As a result, the draft Guidance on Common Elements of Statistical Legislation includes an updated definition of "use for statistical purposes" with reference to quality improvement. A common element 11.3 "international transmission of individual data for statistical purposes" was added to enable such exchange with a producer of official statistics of a foreign country:

> *National Statistical Office with Other Producers of Official Statistics, as relevant, may enable the voluntary exchange of individual data exclusively for statistical purposes in the area of competence of a Producer of Official Statistics of a foreign country. National Statistical Office shall ensure that the recipient has the necessary legal framework in place for the full protection of confidential data.*
>
> *Each such transmissions must be authorized by the Chief Statisticians of the involved Producers of Official Statistics and the conditions be documented in a mutually signed agreement. Such agreements do not diminish the responsibility of the Producer of Official Statistics to ensure the confidentiality of the data they exchange. A list of all such transmissions shall be made publicly available on request.*

28. The Task Force on common elements of statistical legislation noted that it is complicated to make a commonly applicable definition of publicly available data so as to exempt them from confidentiality. The common element 7.8 will already allow the exchange of individual data among producers of official statistics. The above common element 11.3 also enables the exchange of individual data, also confidential data, among producers of official statistics of different countries. Therefore, the Task Force on common elements of statistical legislation did not add an exemption from confidentiality for publicly available data. Where applicable, national legislation may allow the Chief Statistician to exempt publicly available data from confidentiality case by case. (Document 16, submitted to the Bureau for review)

Upcoming consultations

29. In 2018, the Task Force will inform the Group of Experts on National Accounts and the Group of Experts on Business Registers of the first findings, as relevant. The Task Force will also consult with the Intersecretariat Working Group on National Accounts (ISWGNA) to ensure effective coordination of work.

30. As noted in the terms of reference, the work will build on existing national and international experience, including the results of related initiatives of UNSD, Eurostat, OECD, WTO and IMF. The Task Force will ensure coordination with and input to corresponding work undertaken by the Expert Group on International Trade and Economic Globalization Statistics (ITEGS), the G20 Data Gaps Initiative, Eurostat's Integrated Global Accounts (IGA) –projects and the Data Integration Project under the UNECE High-level Group for the Modernisation of Official Statistics.

IV. FIRST FINDINGS OF THE TASK FORCE

31. First findings of the Task Force are presented in Annexes I and II of this progress report. The findings cover the following issues: (i) need for data sharing: (ii) current practices of statistical offices in data exchange; (iii) review of concrete examples of useful data

exchange; (iv) enablers and obstacles of data exchange and possible practical solutions; (v) ways to describe MNEs and changes in their structures and (vi) large and complex cases units.

V. NEXT STEPS

32. The Task Force will continue according to its work plan taking into account the feedback from the AEG and the CES Bureau in finalizing the output of the first stage and setting priorities for further work. **The output of the first stage will be a report, which defines enablers and obstacles to data sharing and suggests practical solutions and tools to be further developed**.

33. **The Task Force will organize a face-to-face meeting in April 2018**. The meeting will focus on developing a conceptual description of MNEs and key data to be exchanged, and on updating the guidance on LCUs. The meeting will also review the draft report covering the first stage of work and agree on the activities for the second stage of work.

34. **The Task Force will present the first results at the 2018 Group of Experts on National Accounts** (23-25 May, in Geneva) and based on the discussions there aims to identify innovative practices. Countries are invited to present their experience in data sharing both at national or international levels, and the lessons learned in dealing with MNEs' data. This may include experience gained from setting up organizational units on large and complex cases (LCUs).

35. **At the second stage (until June 2020), the work will take forward solutions and tools identified at the first stage**. This is likely to include, inter alia:

- Task D - Identify innovative ways to exchange of economic data (including granular data and information on business structures) on MNEs and on aggregated level.

- Task E - Based on concrete examples and sharing of experience, develop guidance, tools and principles for the exchange of data that would enable the NSOs to maintain the quality of national accounts, balance of payments and related economic statistics. Review the application of existing typologies for data sharing. The guidance should take into account confidentiality, respondents' trust and legal constraints, and consider:

    i. Data exchange on MNEs among producers of official statistics;
    ii. Access to the necessary external data sources, including administrative and private data sources;
    iii. Technical, methodological and communicational aspects of MNE data exchange;
    iv. Good practices in analysing MNEs' activities in official statistics.

36. The work has progressed according to the tentative timetable, and is planned to follow it through the second stage of work as indicated below:

First Stage (April 2017 – June 2018)	
Apr 2017	Launch the Task Force and confirm the participating countries and organizations.
Apr-May 2017	Agree on detailed work programme and division of work (possible meeting back-to-back with the Group of Experts on National

	Accounts).
Jun-Sept 2017	Review concrete examples where data exchange would help avoid asymmetries and misinterpretation (Task A).
Oct 2017- Jan 2018	Identify enablers and obstacles of data sharing (Task B) and find ways to detect the most relevant MNEs (Task C1).
Feb 2018	Presentation of the initial findings to the CES Bureau.
May-June 2018	Presentation of the first results and discussion at the 2018 Group of Experts on National Accounts to identify innovative practices.
Second Stage (July 2018 – June 2020)	
Jul 2017-Mar 2019	Drafting the guidance with good practices. Consultation with other relevant Expert Groups.
May 2019	Discussion of the draft guidance and sharing of new innovative practices at the 2019 Group of Experts on National Accounts.
May-Aug 2019	Finalizing the guidance with good practices.
Sep 2019	Submit the report to the CES Bureau.
Oct-Dec 2019	Electronic consultation of the guidance among CES members.
Jan-Mar 2020	Finalize the report based on the feedback received.
Apr 2020	Submit the report to the CES plenary session for endorsement in June 2020

37. The main output of the Task Force work will be *Guidance on National and International Exchange of Economic Data*. The 2019 Group of Experts on National Accounts will review and discuss the draft guidance especially to provide updates on new innovative practices. The updated draft Guidance is planned to be submitted to the CES Bureau in September 2019, and thereafter for electronic consultation among CES members.

VI. ISSUES FOR DISCUSSION AT THE CES BUREAU

38. The Bureau is invited to:

a) Comment on the progress of work and on the initial findings of the Task Force (Annexes I and II) and advise the Task Force in finalizing the outcomes of the first stage;

b) Provide advice on the priorities of the second stage of work and on the focus of the *Guidance on National and International Exchange of Economic Data* to ensure that statistical offices are able to yield maximum benefits from the Guidance;

c) Consider the request of the 2017 CES plenary session asking the Task Force to report to the Conference early in its mandate to support statistical offices in addressing asymmetries in cross-border flows arising from the globalization of production, trade and financing.

39. The Task Force would welcome Bureau's advice on the following ideas discussed by the Task Force:

a) NSOs are encouraged to review their current suppression and confidentiality rules and practices, as they may not have been updated recently. Legal frameworks should be updated to allow exchange of confidential data among producers of official statistics. In addition, data could be classified to public (non-confidential), semi-confidential and confidential so as to increase clarity and to allow a stepwise approach to exchanging data among producers of official statistics;

b) The Chief Statistician should be allowed to exempt enterprise data from confidentiality when the same data are publicly available from other than statistical sources. Further, information on the treatment of certain activities of MNEs in statistics could be considered semi-confidential to enable their sharing with other producers of official statistics in the country and in other countries, when so decided by the Chief Statistician;

c) The current networks of experts related to MNEs could be combined to build a global LCU network among producers of official statistics. The networks that could come together for this purpose include ESS Early Warning System, OECD network, Nordic LCU network etc.;

d) Networking with MNEs themselves should be strengthened across countries to have contact points with whom to discuss the analysis of their data and data exchange;

e) NSOs need to understand that increased data sharing is not cost-free. It entails preparing agreements, organizing proper governance and collaboration, putting up the necessary IT-systems etc. The work needs to be properly funded and resourced.

ANNEX I: FIRST FINDINGS OF THE TASK FORCE

Need for data sharing

1. Traditionally, NSOs have relied on direct data collection from enterprises and individuals. There are certain evident benefits from direct data collection:

- Ability to determine the contents of data collection so that it suits the needs of statistical production and the users of statistics.
- Guaranteed confidentiality of the data collected for statistical purposes as the NSO can act as an independent, impartial and objective agency when collecting data directly.
- Good control over the quality of the data collected based on established methodologies and professional practices.

2. These traditional benefits are, however, being challenged by societal change, including:

- Public administrations in general are collecting lots of data to carry out their tasks. Often these data can be used for the compilation of official statistics. In areas where administrative data are similar to data collected by NSO's for statistical purposes, important reductions in statistical response burden can be achieved by making use of administrative data.
- Enterprises are digitalizing their administrative and other information management systems. These digitized systems are increasingly standardized, rigid and adapted for certain reporting purposes. To adapt enterprises' reporting systems to provide data that has been tailored to changing statistical needs is getting more difficult and expensive.
- The economies are globalizing and enterprises often operate as parts of global value chains. To compile reliable statistics based only on data from enterprises active in the country of the NSO is, therefore, getting more challenging.
- NSOs are typically operating under national jurisdiction and they have no legal rights to request data from entities operating outside the national border.

3. In many countries, NSOs face the general requirement that the data needed for public administration – including statistics – should only be collected once. Furthermore, statistics need to remain relevant in the conditions of globalized economy, and provide more detailed and timely information about changes in the economy. This calls for more data going beyond the national territory or being available outside the reach of the national NSO.

4. To summarize, there are both external factors that influence data exchange (e.g. digitalization in its different forms) and statistical needs to increase data exchange to ensure the relevance and the overall quality of official statistics. Therefore, NSOs rely more and more on the use of secondary data and, consequently, exchange more data with other institutions, both nationally and globally.

Current practices of statistical offices in data exchange

5. This section analyses the outcomes of the in-depth review of the exchange and sharing of economic data. The review was carried out in October 2016, based on a paper by Statistics Finland with inputs from a number of countries and organizations. The paper identified issues and problems and made recommendations on possible follow-up in areas where progress is achievable, including the need to develop coordination mechanisms, exchange experience, develop general guidance and principles for data exchange, and develop technological tools for

this purpose. The review was largely based on a survey of country experiences which was carried out in all CES member countries. The following overview of existing practices at national and international levels is based on the in-depth review and survey replies. The 48 respondents included national statistical offices and entities of central banks that produce official statistics. The respondents are referred to as "offices" in the following text.

6. The survey covered the following main areas: the current scope of economic data exchange nationally and internationally; organizational aspects of data sharing; benefits and challenges experienced; possible international activities in support of national capacity development and other comments by countries.

7. In the survey, all offices indicated carrying out some data exchange at the national level, the most commonly receiving or sharing aggregated data with other producers of statistics. This takes place in over 80 per cent of offices that responded to the survey. For micro-data exchange, almost 80 per cent of offices receive data from other producers of statistics and three out of four offices receive micro-data from administrative sources.

8. Half of the respondents receive micro-data from commercial sources, over half - not only receive, but also provide micro-data to other producers of statistics and over two thirds provide micro-data for other purposes than statistical, for research.

9. Over 90 per cent of respondents have engaged in *international data exchange*. Typically, in more than 80 per cent, this international data exchange involved aggregated data. In fact, only one office in three engages in micro-data exchange.

10. Usually, data exchange takes place in statistics where cross-border transactions are recorded and the exchange aims at minimizing bilateral asymmetries between the same cross-border flows reported by different countries. The respondents emphasised that international data exchange may be facilitated by international organizations and based on bilateral or multilateral agreements between countries.

11. The survey revealed the increasing trend of micro-data sharing started 40 years ago when the first countries took steps towards the reuse of micro-data at national level. About 50 years ago, all countries were in the down-left corner, whereas currently only three offices out of 48 respondents remain there (Graph 1).

Graph 1.
Trends in the exchange and reuse of micro-data

		Reuse of micro-data at national level		
		NO	YES	
Exchange of micro-data at international level	YES	0	18	18
	NO	3	27	30
		3	45	

12. During the recent years, the reuse of micro-data has increased at national level and at international level the exchange of data is now increasing. Major factor here is the changed EU statistical law and Eurostat's SIMSTAT-project that enabled international micro-data sharing between statistical offices of the EU Member States in the domain of international trade in goods statistics. Now 18 offices of the respondents are in the up-right corner and this figure may increase in the near future.

13. However, *exchange of data on MNEs* is still relatively rare. Every fourth responding office has examined the activities of MNEs with other countries and every third office has examined MNEs within a country with other producers of official statistics. Some countries mentioned that they have benefitted from organizing MNEs' data collection through a specific large and complex enterprises unit (LCU).

Review of concrete examples of useful data exchange (Task A of the work plan)

14. The Task Force studied quite a few real data exchange cases and analysed the challenges and benefits experienced by participating offices (Task A of the work plan). At the same time, the Task Force also collected examples of agreements and Memoranda of Understanding that regulate data exchange. The Task Force will use these as a basis for developing tools and principles of data exchange in the second stage of work.

15. As discussed at the CES plenary session, before engaging in international data exchange on a larger scale, the first priority should be to improve national consistency of data on large MNEs across statistical domains. The Task Force has questioned whether it is possible to achieve coherent national data on large MNEs without any international data exchange. Having counterpart data helps to solve national consistency problems. Examples show clearly that international profiling has improved the understanding of national structures of MNEs. Based on practical experience, it seems that international profiling should at minimum cover the largest and most complex MNEs.

16. There are rules in place for national data sharing and even for international data sharing in the European Statistical System (ESS). Article 21 of the Regulation (EC) No 223/2009 of the European Parliament and of the Council of 11 March 2009 on European statistics as well as Council Regulation (EC) No 2533/98 of 23 November 1998 concerning the collection of statistical information by the European Central Bank accommodate the possibility of transmission of confidential data both within the ESS and the ESCB. However, there are no frameworks for bilateral or multilateral data exchange between statistical producers beyond EU. At the same time, MNEs operate well beyond EU. Perhaps the rules and conditions for national data sharing could be applied to international data sharing.

17. The important question is, of course, what will be the reaction of large MNEs to the exchange of their data among the producers of official statistics. The results of the ESSnet on International Profiling provide some light to this question. Practical experience shows that obtaining the required information from MNEs is difficult in some countries due to the sensitivity of information. However, there was also an example where the sensitivity was not considered a major issue. For some cases, the majority of this information was available in published accounts and, therefore, there were no resulting issues with the sensitivity of data. This example also illustrated that businesses demonstrate a cooperative attitude once they are convinced that the statistical office is applying strict rules on confidentiality through signed agreements, and that data will be used for statistical purposes only. In Mexico, for instance, the statistical office has to inform the respondents about how their information will be secured.

18. Better profiling of MNEs is needed to improve the quality of economic statistics. It requires a level of international data sharing not seen before. This can only be achieved if clear rules and processes are put in place. All practices need to be transparent and well explained to the enterprises whose data are shared.

19. Brief descriptions of MNE's data exchange cases which the Task Force has analysed so far are presented below. The examples are split in regular and one-off data exchange cases.

Examples of regular data exchange

20. Current examples of regular data sharing mainly relate to formal and pre-defined data exchange where data structures and data sharing processes are predefined.

21. The **Memorandum of Understanding on the Exchange of Import Data between Canada and the United States** is a great example of long lasting micro-data exchange. Since 1990 Statistics Canada and the United States Census Bureau have shared customs import transactions and used the data to compile official export statistics. The strength of the Memorandum of Understanding 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. This example should stimulate international discussion concerning cross-country data sharing agreements, leading to a greater use of these types of agreements, given the increasingly global nature of the economy. The Memorandum could serve as a basis for developing a generic agreement for data exchange between two statistical authorities of different countries.

22. The majority of the challenges over the years have been of an operational nature. 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 a common understanding of the challenges.

23. Both Canada and the United States have been well served by the Memorandum of Understanding on the Exchange of Import Data between Canada and the United States. Not only has the agreement enhanced the quality of the trade statistics and reduced respondent burden in each country, it has also resulted in a number of additional benefits: openness with respect to data confrontation and joint analysis, launch pad for future data exchange in the area of foreign affiliate statistics and regional (North American) supply-use tables and leveraging international statistical conferences to engage in data confrontation activities.

24. The **EuroGroup Register (EGR)** is a unique statistical business register, covering MNE groups which are partially or fully active in the EU. In the yearly EGR production cycles, national statistical offices deliver to EGR micro-data on legal units, relationships, enterprises and enterprise groups. The national data are complemented with commercial data. Based on these data, applying predefined preference rules and priority order the EGR creates the global structures of the multi-national enterprise groups. The final picture on MNE groups is distributed to statistics compilers in all EU Member States and EFTA countries. These coordinated populations can be used as the frame for compiling statistics related to multinational groups at national level.

25. The EGR ensures that the national statistics compilers have a harmonised picture on the enterprise groups' structures and characteristics when producing national statistics related to globalization as well as related to other national enterprise statistics, involving a consistent

delineation of cross-border phenomena. This register stores the units being part of multinational enterprise groups, the unit identifiers, the relationships within the group and some economic characteristics (such as turnover or employment). EGR is only one of the sources of national statistics compilers when producing statistics related to globalisation. The EGR's coverage is still incomplete and data quality should be further improved. EU and EFTA statistical offices and Eurostat are continuously working on the EGR to make it more complete and improve its quality.

26. The European Parliament/European Council Regulation 177/2008 regulates the data exchange processes and the actual data that can be exchanged between national registers and the EGR. The Commission Regulation 192/2009 and Commission Regulation 1097/2010 complement the basic EP/Council Regulation with more detailed provisions.

27. In 2009, Eurostat and ECB established the **'FDI Network'** to address the problem of asymmetries in the area of Foreign Direct Investment (FDI) statistics. The FDI Network is a platform aimed at facilitating the secured exchange of data on individual (enterprise level) FDI transactions and positions (above a pre-defined threshold) between the national compilers of the EU Member States involved. Transactions and positions exchanged in the FDI Network 2013 – 2016 are presented in the Table 1 below. Eurostat provides the technical infrastructure and resources to facilitate the data exchange and reconciliation. In the FDI Network system, the initiator Member State sends via Eurostat's secure data transmission channel a reconciliation request to the counterpart Member State. The request is detailed with several transaction or position specification data fields, including the names of the enterprises involved and the euro amounts in question. The FDI transactions are exchanged on an on-going basis as soon as they become available to the FDI compilers. The exchange of FDI positions takes place annually during a window period between May-June with non-limited reference period. All EU Member States are currently part of the FDI Network. It is a voluntary action, not regulated by EU legislation. Recently there has been some discussions on possibilities to expand the network to countries outside EU, which according to Eurostat is not possible in the near future due to resource constraints. Nevertheless, Eurostat is prepared to share the expertise gained in running the FDI network for a possible setup of a similar network for non-EU countries.

Table 1.
Transactions and positions exchanged in the FDI Network 2013 - 2016

	2013	2014	2015	2016
Transactions, N° of cases	143	81	83	157
Transactions Amounts (€ Bn)	478	336	808	1448
Positions, N° of cases	195	67	292	393
Positions, Amounts (€ Bn)	1462	822	2490	2787

28. In accordance with a Memorandum of Understanding between Eurostat and ECB, these institutions regularly exchange data in the area of **national accounts and balance of**

payments (BoP) and international investment position (IIP) data. The key variables of data exchange include the main EU aggregates, sectoral accounts and financial accounts, monthly and quarterly BoP data on BoP and IIP. The main benefit is to ensure consistency of data between quarterly and annual aggregates. It is of upmost importance that both Eurostat and the ECB publish consistent financial accounts and balance of payments data.

29. On the basis of another Memorandum of Understanding between Eurostat and ECB on the quality assurance of statistics underlying the **Macroeconomic Imbalances Procedure (MIP)**, the ECB/DG-Statistics provides Eurostat with quality assured datasets accompanied by a brief metadata report explaining major events and revisions of the datasets. The data are compiled by different institutions in different countries (National Statistical Offices or National Central Banks). The exchange of data between Eurostat and the ECB ensures the consistency and thereby improves the quality of quarterly and annual aggregates. The biggest challenge in this respect is the timeliness, as the time between the receipt of data and the validation is usually very short.

30. The 2014 **OECD Report on Microdata Access** (Chapter 7. Case study: A circle of trust in Nordic countries) provides an interesting case where micro-data access has been provided for statistical purposes only in the Scandinavian countries. The national statistical offices of Denmark, Norway and Sweden exchange identifiable personal data to facilitate the identification of commuters across borders for the joint production of regional workforce flows across the national borders. The chapter also describes legal considerations on the EU and national levels.

31. The Memorandum of understanding on the **exchange of information among national central credit registers** (CCR) for the purpose of passing it on to reporting institutions may provide some useful ideas. The purpose of this MoU is to provide a framework that will allow reporting institutions to obtain a more complete overview of the indebtedness of a borrower by allowing information available in national CCRs to be supplemented with information from other CCRs operating in the EU. The data sharing on CCR's does not directly serve statistical purposes, but CCRs are also used for statistics. Also, the planned data exchange within AnaCredit system could be studied. The examples do not only deal with MNE's, but they are very encouraging.

32. There are various draft regulations that the European Commission has submitted to the Council and Parliament as a response to the BEPS initiative, calling for transparency in MNEs' tax declarations in the member states. One of these regulations is Directive 2016/881 of 25/5/2016 (to amend Directive 2011/16/EU), which foresees the '**mandatory automatic exchange of information in the field of taxation**' regarding MNE's.

33. The example of **Mexico focuses on better use of administrative data** and the linking of data from different sources (administrative, census, other surveys). Data exchange occurs both at macro and micro levels. Use of different units in different data sources is an important challenge in data linking. At international level, Canada, Mexico and United States are planning to exchange data for the extended supply and use tables.

34. **International cooperation on macro-economic statistics under the umbrella of the Inter-Agency Group on Macro-Economic Statistics and the Data Gaps Initiative** has recently taken a further step in making selected macro-economic indicators more coherent. One of the main features of the cooperation is the establishment of clear distribution of responsibilities between international organisations. GDP and selected related macro-economic

indicators are transmitted by national data providers to international organisations. A subset of these data is subsequently shared among the international organisations concerned through common Statistical Data and Metadata eXchange (SDMX) standards. Following national compilation, validation and transmission, data is further validated once by an international organisation chosen as primary validator. Data is then shared and finally published through the existing dissemination systems of all international organisations involved.

Examples of one-off data exchange

35. There are also examples of ad-hoc data exchange between countries, where the level of data confidentiality varies (public, semi-confidential, confidential). For example OECD and Eurostat have organised workshops for members to discuss bilaterally asymmetries related to foreign trade statistics. **The TF plans to develop this part concerning small scale data exchange further using the concept note on ad-hoc data exchange** (to be prepared by Finland). The internal guidance for Statistics Finland on this type of data sharing, prepared in collaboration with their legal unit would be useful to share with the Task Force. Eurostat's Early Warning System (EWS) is also related to this type of data exchange - but without confidential data.

36. During the period April – September 2015 a wide scale **exchange of micro-data on intra-EU trade** in goods took place in the EU. Twenty Member States exchanged micro-data on their exports (at trader and product level) with the respective partner countries for the reference period January 2013 – August 2015. Special IT system together with secure communication network was put in place for this pilot exercise. The purpose was to investigate the statistical re-usability and quality of the exchanged data as well as the technical feasibility of exchanging large volume of datasets in a secure and timely manner on a monthly basis. 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. In its May 2016 meeting, the ESS Committee discussed the results. Main benefits are a) reduction of reporting burden on business, b) improvement of data quality, c) reduction of asymmetries. Main challenges are a) dependence on data from other countries, b) timeliness and calendar of data exchange, c) ensure data confidentiality and data security for the data coming from other countries. The ESS Committee recommended making the exchange of micro-data on intra-EU exports compulsory between EU Member States. The draft Framework Regulation on Integrated Business Statistics (FRIBS), which is now with the Council and the European Parliament, will introduce mandatory exchange of micro-data on intra-EU trade in goods among Member States, if and when adopted.

37. **Improving the quality of Foreign Affiliates Statistics (FATS) by exchange of micro-data between Nordic countries** is an interesting case of one-off data exchange. The national statistical offices of Norway, Denmark and Finland negotiated a confidentiality agreement on the use of micro-level FATS data. Micro-data sharing turned out to be useful for improving the quality of national statistics. This exercise revealed both methodological differences to be discussed and practical problems related to data coverage of different countries. The results of this project prove that by working together and sharing data the quality of statistics could be notably improved.

38. **The World Trade Organization (WTO) carried out a project to analyse bilateral trade asymmetries between Costa Rica and its main trade partners**. The project led to the development of methodology to reduce asymmetries observed between Costa Rica's reported merchandise trade statistics and the values reported by its trading partners, using mirror data.

The project resulted with somewhat reduced asymmetries. The highest overall annual asymmetry reduction on the export side was 12.5 per cent and on the import side 29.6 per cent. This exercise took place within the OECD project to develop symmetrical trade matrices for the construction of the global Input-Output tables underlying the OECD-WTO Trade in Value Added (TiVA) database.

39. **The testing of European Profiling** demonstrated a number of potential improvements to the economic data collected at national level in the United Kingdom (UK). 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. Of the 26 cases that ONS profiled during this testing period, 19 were successful in terms of gaining agreement from all parties involved, i.e. the Global Enterprise Group (GEG), national statistical users and partnering NSOs. For the majority of these, employment, turnover and NACE variables were collected at the new enterprise level. The UK's experience was that, once cooperation was established with the GEG, most had no issues regarding sharing the data securely with other NSOs in Europe. For some cases, the majority of this information was available in published accounts and therefore there were no resulting issues with the sensitivity of data. However, concerns about data sharing were raised in a few cases, especially in the Oil Industry, and whenever additional detailed data was requested to what had already been published. The result of not getting buy in from the groups and not having a legal framework in place was that some of the key European groups could not be profiled during this testing period. Some GEGs which had agreed to co-operate, subsequently informed NSOs that data sharing was not a possibility. This is a concern if profiling is to be successful for the largest and most important GEGs. Although ONS has been visiting groups for many years, more intensive profiling highlighted the many benefits of meeting senior group accountants on a face to face basis to strengthen relationships. Through visiting the GEGs, ONS profilers learned a great deal about why they set up specific organisational structures. Some similarities have been identified in the way groups operating in specific industries are organised, i.e. the Oil and Gas and Chemical sectors. Positive feedback from the GEGs was received, acknowledging 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. Some GEGs welcomed the idea of a central contact point within the NSO and some liked the possibility of reporting all data to just one NSO. A few even invited ONS to tap into their own internal accounting systems to pick the required data directly (e.g. via an XBRL taxonomy).

40. **Project on linking data on foreign-owned United States (U.S.) companies to domestic employment data** indicates various related benefits and challenges. Enterprise level data are collected by Bureau of Economic Analysis (BEA) for statistics on Activities of Multinational Enterprises (AMNE). Data on U.S. employment comes from several sources: Bureau of Labor Statistics (BLS), Quarterly Census of Employment and Wages, U.S. establishments covered in the unemployment insurance program, Data collected by states and compiled by BLS. The process of linking is based on Employer Identification Numbers (EIN) and consists of computer match of EINs and manual work to link additional establishments to the enterprises. The benefits of data linking are: expanding the data available for studying effects of direct investment on the U.S. economy, improvement of survey data, greater frequency of data and potential to reduce respondent burden. The challenges are: very labour intensive, not timely, legal requirements and limitations.

Summary analysis of studied data exchange cases

41. Table 2 provides a summary of the studied data exchange cases with respect to two essential aspects: data sensitivity (aggregate level data or confidential micro-data) and purpose of use (for one-off study or for regular compilation of statistics). Table 3 summarises some key findings which enabled data exchange for different types of cases. One-off aggregate level data exchange seems quite easy to organise if there is a common interest between the parties. Regular data exchange of confidential micro-data in turn requires legislation or at least a lot of administrative and technical work and trust between the parties.

42. To finalize the analysis, the Task Force will collect a few more examples of data exchange (at international or national level), especially on ad-hoc data exchange. Finland is also preparing a separate guidance note concerning ad-hoc data exchange related to resolving bilateral data asymmetries and MNE restructuring cases. The Task Force is also collecting more information on concreate benefits and challenges of the available examples of data exchange.

Table 2.
Summary of different types of data sharing examples

	One-off data exchange	**Regular data exchange**
Aggregate level data	- WTO trade asymmetries (case Costa Rica) - IMF workshops on FDI asymmetries	- Eurostat and ECB data exchange on NA, BOP and MIP data - Inter-Agency Group on Macro-Economic Statistics
Confidential micro-data	- Pilot exchange of micro-data on intra-EU trade - Nordic FATS statistics - Testing of European Profiling (UK) - Micro-data linking (e.g. linking data on foreign-owned U.S. companies to domestic employment data)	- Exchange of Import Data between Canada and the United States - EuroGroup Register (EGR) - FDI Network - Intra-EU trade in goods statistics - National central credit registers - OECD report on micro-data access

Table 3.
Key prerequisites for successful data exchange

Type of data exchange	Key prerequisites for successful data exchange
One-off aggregate level data exchange	- Understanding the remarkability of making mirror comparisons to improve quality of national statistics - Availability of comparable data and metadata - Resources dedicated for this type of work
Regular aggregate level data exchange	…previous (see above) and - Identified need for regular data exchange - Willingness to compromises and to absorb costs - Mutual agreement between participants - Pre-Specified data structure - Automatic processes to manage mirror data
One-off Confidential micro-data exchange	…previous and - Trust between participants - Agreement on use and storage of micro-data - Secured process for exchange
Regular confidential micro-data exchange	…previous and - Change of culture how to produce statistics - Common legislation and risk management - Secured and standardized process for data exchange

Enablers and obstacles of data exchange and possible practical solutions (Task B of the work plan)

43. NSOs are professional organizations that rely in their operations on internationally agreed statistical standards and recommendations, in particular the Fundamental Principles of Official Statistics and the related European statistics Code of Practice. From the data exchange viewpoint, the most important Fundamental Principles are the following:

Principle 2. To retain trust in official statistics, the statistical agencies need to decide according to strictly professional considerations, including scientific principles and professional ethics, on the methods and procedures for the collection, processing, storage and presentation of statistical data.

Principle 5. Data for statistical purposes may be drawn from all types of sources, be they statistical surveys or administrative records. Statistical agencies are to choose the source with regard to quality, timeliness, costs and the burden on respondents.

Principle 6. Individual data collected by statistical agencies for statistical compilation, whether they refer to natural or legal persons, are to be strictly confidential and used exclusively for statistical purposes.

Principle 10. Bilateral and multilateral cooperation in statistics contributes to the improvement of systems of official statistics in all countries.

44. Principles 5 and 10 can be considered as enablers of data exchange. Principle 5 gives NSOs' a general mandate to the use of data collected by other organizations. Principle 10, in turn, urges NSOs to collaborate with each other to improve statistics globally.

45. Principles 2 and 6, however, pose some challenges to be considered carefully in the context of data exchange between statistical organizations. The reasons are the following:

- When using secondary data, NSOs do not have the control of the methods and procedures of collecting and processing statistical data, when that part is carried out by another organization. However, the NSO shall retain professional independence in selecting the data sources to be used (principle 5), also in the choice between using administrative data or direct data collection.

- Also, the methodologies regarding the use of secondary data are far less developed than the methods for compiling statistics based on direct data collection.

- Confidentiality is a key concern when engaging in data exchange. While data collected for statistical purposes are to be strictly confidential and to be used exclusively for statistical purposes, some statistical laws allow the use of statistical data for scientific research when authorized by the NSO. In the European Union (EU), the European Statistical Law enables the exchange of individual data among NSOs and Central Banks in the EU, while some EU countries do not allow it in their national legislation. Some statistical offices provide their micro-data or other granular data for researchers in specially designed secure environments.

- Statistical legislation also typically treats data acquired by statistical offices from administrative data sources as confidential when acquired for statistical purposes. The same administrative data may not be confidential in the legal settings governing the activities of the public organization that collects them.

- Confidentiality of business information is also of concern to respondents. Close collaboration with respondents when extending data exchange for statistical purposes is, therefore, crucial.

Benefits and challenges of data sharing

46. The Task Force analysed the benefits and challenges reported in the survey of statistical offices for the analysis of obstacles and enablers of data sharing.

47. According to the survey of statistical offices, national legislation that regulates data sharing exists in 90 per cent of the countries, and a common business identifier is widely used, in more than three out of four countries. However, this does not mean that data sharing for statistical purposes would be well regulated or enabled. 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 also very common.

48. **Almost 90 per cent of surveyed countries reported that improved consistency is the main benefit of data sharing and over 80 per cent reported as a result better data quality, such as accuracy, relevance and timeliness**. Efficiency gains and reduced response burden were pointed out in two thirds of the replies. Data sharing may also increase coverage of target population and enable a more detailed analysis and understanding of business activities. The increased collaboration and reuse of data helps to promote common standards and classifications.

49. **The main difficulties linked to data sharing include heavy procedures to ensure confidentiality or increased risks of disclosing confidential data** (mentioned by two thirds of respondents), limiting legal frameworks (mentioned by 60 per cent) and insufficient technological readiness (in almost half of offices). The possible decrease in respondents' trust is considered as a key risk by 15 per cent of offices. The other major issues that were mentioned include:

- increased dependency from other national statistical offices 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 the same as the statistical unit for compiling statistics
- quality issues especially coverage and
- timeliness of external data sources and high investment costs

50. According to the respondents, no serious risks had materialized due to data exchange. Eleven offices reported that data exchange increased criticism about the quality of data and ten offices reported that data was misinterpreted. Very critical risks relating to the reputation of statistical office or respondents trust were less frequent (two observations each).

51. 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 analyse data received the highest ranking as 85 per cent of offices assessed the capacity as medium or high. Staff's skills in data mining and linking were not so highly ranked, as 75 per cent of responding offices assessed these skills as being at the medium or high level. The offices noted that further training will be needed.

52. In general, the international organizations play a key role in facilitating the sharing of best practices and provision of fora for discussions. Guidance and standardization issues are also important areas for international organizations' contribution. According to the country responses, the international activities that would facilitate data exchange include developing methodologies to ensure confidentiality (65 per cent), sharing technological solutions and tools for data exchange (63 per cent) and developing general guidance for data exchange (56 per cent).

Ten aspects of data sharing and the related obstacles and enablers

53. To conceptualize the analysis further, the Task Force members shared their views on the key obstacles and enablers of the exchange and sharing of economic data in their office.

These were summarized with the outcomes of the survey of statistical offices. The following Table 4 presents the outcome with ten different aspects that include elements that either prevent or facilitate data sharing.

Table 4.
Obstacles and enablers of data sharing

ASPECTS	OBSTACLES	ENABLERS
Legal infrastructure	Too limiting confidentiality regulations	Review of confidentiality rules, practices and assumptions
	No legal framework allowing exchange of individual data for statistics	Establish the infrastructure to exchange information, e.g. legislation and agreements
	No access to data held by other authorities or private parties	Extend the mandate to access data existing in society
Resources	High costs and time needed to start data sharing	Higher efficiency and cost savings in data collection
	Lack of resources dedicated to data exchange and analysis	Shared solutions for data exchange
	Large technical investments needed	Dedicated resources for data exchange and analysis
Data linking	No common identifiers nationally or internationally	Developing common and unique identifiers
	Different data collection units, concepts and classifications	Extending application of harmonized units, concepts and classifications
	Scattered and unidentified sources of data	Mapped and linked datasets
Substantive	Difficulties to collect national data in the context of globalization	Meaningfulness of world level data
	Poor understanding of the data needed to capture global activities	Good understanding of critical data items
	Difficulties to capture MNEs' activities correctly	Better understanding of MNEs through profiling level data
Process	No Global Groups Register	Extending the idea introduced by the Euro Groups Register
	Production processes are not synchronized	Defined and agreed data exchange process
	Poor timeliness of data exchange	Timed data exchange in critical areas
Cultural	No buy-in from management of the statistical office	High-level commitment to data sharing
	Lack of trust between counterparts in data exchange	Close collaboration with counterparts in data exchange
	Lack of willingness among respondents	Shared evidence on reductions in response burden and quality improvements
Risks	Increased dependency from external data	Coping strategies for using multiple data sources
	Risks to respondent relations	Good communication and trust with respondents
	Risks to the image of official statistics	Risk management tools and enhanced communication

Uncertainties	Lack of information about data exchange options	International platforms for collaboration
	Lack of information about benefits	Examples of successful data exchange
	Uncertainty about impacts on the quality of statistics	Proven improvements in quality
Knowledge, skills and methods	Lack of necessary methodological knowledge	Well-developed methodologies for data linking
	Limited data mining skills	Well-developed data mining skills
	Lack of knowledge about resolving discrepancies	Practical examples of successful data reconciliation
Technical	Insecure environments of data exchange	Secure technology for data exchange
	Different data storage and exchange formats	Common data storage and exchange formats
	High computing capacity needed	High performing computing environment

54. As a next step, the Task Force elaborated and described the obstacles and enablers and sought possible solutions for dealing with the obstacles and considered the tools required to address the obstacles that will lead to a greater level of national and international data sharing.

55. Annex II further describes issues and solutions under each aspect.

Ways to describe MNEs and changes in their structures (Task C1 of the work plan)

56. The Task Force has decided to focus on this topic at its face-to-face meeting in April 2018. The meeting will be based on the analysis carried out so far, including a summary of types of MNEs that are most relevant for data exchange and a list of critical data items to be exchanged. The Task Force is developing the listing of critical data further along with a conceptual description of MNE structures.

57. The Task Force has identified that firms with the following characteristics should be the focus of data exchange:

- Complex ownership structures, especially including special purpose entities
- Large amount of activity (e.g., employment or sales/turnover)
- Re-arrangements and relocations of MNEs
- Global production arrangements
- Ownership of intellectual property products

58. Firms with these characteristics are difficult to measure, causing revisions to economic statistics and bilateral discrepancies. They may also have domestic impacts on employment, productivity, taxation, etc. that would be important to study and understand. Of course firms may fall into several of these categories, but this overlap would highlight the need to exchange the data.

59. Based on the first analysis, the Task Force decided to derive business cases starting from actual data exchange cases and will classify MNEs according to the ways they act

globally. The Task Force will analyse the results of other task forces or groups to develop generalized examples of MNEs, for example:

- During the activities of the ESSnet on International Profiling, colleagues from INSEE collected examples from France, UK, Italy and the Netherlands of oil companies to show how the business lines organizations were quite similar.
- Intellectual property rights are under analyses in a specific task force.
- Digital economy MNEs are in the public eye not only for statistics.
- U.S. companies in Europe often adopt similar organizational structures.

60. **Once the critical MNEs for data exchange have been identified, the Task Force will determine the data items that would be most useful to share**. Needs may vary depending on the data sharing partners. The relevant arrangements are summarized as: 1) domestic microdata exchange among different institutions (responsible for different domains), and 2) international microdata exchange among NSOs of different countries and among NSOs and international institutions. The focus or needs of the institutions could be in some of the following categories:

- Register-type information, including identifiers
- Structures of MNEs
- Key globalization variables
- MNE data most prone to revision
- Financial/operations data, such as sales/turnover, employment, income
- Accounting standards information

Large and complex cases units (Task C2 of the work plan)

61. Organizational units, responsible for consistency analysis of MNEs in particular, are called large and complex enterprises units (LCU). The Task Force will launch this task in spring 2018.

62. This work will possibly update the Chapter on large and complex enterprises units of the Guide to Measuring Global Production. The conclusions of the Chapter note that collecting data from large and complex enterprises will demand an increasingly multidisciplinary approach. Survey managers, statisticians, informatics specialists, subject matter experts, respondent relationship managers and survey design specialists will need to work together to ensure availability and quality of data. The survey of statistical offices on LCUs, carried out by UNECE in 2013, highlighted the experience gathered so far. According to the survey, LCUs have improved cooperation with respondents, which ensures a better understanding of data requests and reduces response burden. At the same time, knowing the most important respondents helps statisticians solve inconsistencies more efficiently.

63. Even though the activities of LCUs vary across countries, they have provided a useful mechanism to support statisticians in dealing with MNEs across statistical domains. LCUs can also improve efficiency by promoting the use of common tools, drafting instructions for data collection and enhancing consistent treatment of large and complex enterprises' data. Moreover, when LCUs review MNEs' data they do that for various statistics whereas without LCUs this work would be done multiple times in various statistics leading to higher costs and lower consistency.

64. The Task Force will follow up on the recommendations of the *Guide to Measuring Global Production* and review the progress of countries and lessons learned from the actions to:

a) Set up an LCU based on challenges with large respondents, structure of national economy and complexity of the business sector.

b) Learn from other countries that have developed strategies for and gained experience in dealing with large and complex enterprises.

c) Consider alternative ways to organizing work on large and complex enterprises at the NSOs.

d) Develop cooperation mechanisms and collaboration among producers of statistics, both nationally and internationally.

65. To date several countries have organized the collection and/or consistency checking of some MNEs' data to specific organizational units focusing on large and complex enterprises. Currently, more countries are planning to establish similar units. Centralized management of MNE's data may also support better documentation of data issues and a higher concentration of skills and knowledge on MNEs that facilitates national and international data exchange.

66. When the CES plenary session discussed data exchange in June 2017, they agreed that establishing LCUs at national statistical offices is a prerequisite for having consistent data. The Conference expressed support for creating an international network of experts dealing with such enterprises' data.

67. Such a network would be useful for exchanging best practices in dealing with MNEs' data. The network could also facilitate identifying the critical MNEs for data exchange, carry out data exchange and analysis, and develop common ways for communicating with and approaching large and complex MNE respondents.

68. The Task Force will use the Chapter on LCUs of the *Guide to Measuring Global Production* as a basis, and update the information with latest work in the area (EU early warning system, Nordic LCU network, etc.). UNECE will review possibilities of establishing an international network of experts on large and complex enterprises to work alongside with the UNECE/Eurostat/OECD Group of Experts on National Accounts.

ANNEX II: OBSTACLES AND ENABLERS

A. LEGAL ASPECT

1. Obstacles related to the legal aspect

Too limiting confidentiality regulations

1. Naturally, there are a number of legal obstacles to sharing micro-data or confidential data between a national statistical office and other organizations nationally and internationally. In most countries, the legislation governing statistical activities enables national statistical organizations to collect a wide range of information from businesses, households and the government. At the same time, the legislation ensures confidentiality by prohibiting the statistical agency from releasing information in such a way that the individuals, businesses, or also government entities can be identified and the legal setting places penalties on its employees if confidentiality is breached.

2. For example, the legal restrictions placed on Statistics Canada under the Statistics Act state that:

> *"no person who has been sworn under section 6 shall disclose or knowingly cause to be disclosed, by any means, any information obtained under this Act in such a manner that it is possible from the disclosure to relate the particulars obtained from any individual return to any identifiable individual person, business or organization."*

3. While the law is clear that 'micro-data' cannot be shared outside the employees sworn or working under the legislation, it often also includes provisions for the sharing of information among statistical authorities under certain circumstances. For the most part, this sharing is permitted when it helps to reduce the burden placed on the respondent or when it significantly enhances the use of the information.

No legal framework allowing exchange of individual data for statistics

4. In many countries, statistical authorities cannot exchange individual data among themselves, but every organization has to collect or access the existing data source directly. In some countries, however, the national statistical office can access data collected by other producers of statistics, but not the other way around.

5. Given that most laws governing NSOs were developed and adopted a number of years ago – often before globalization and digitalization - the laws are typically silent on the sharing of data across national borders. In addition, because in the past, the need was not evident, the necessary infrastructure (agreements, business processes etc.) to engage in international micro-level data sharing or the exchange of sensitive information among statistical authorities has not been developed with a few exceptions.

No access to data held by other authorities or private parties

6. It is still the case in a number of countries, that producers of official statistics cannot access data held by other government authorities, or that they do not provide sufficiently detailed data. It is very rare for the statistical authorities to have a legal mandate to access data held by private bodies that cover other respondents than the data holder itself.

2. Solutions for the development of the legal framework

Review of confidentiality rules, practices and assumptions

7. Data users are increasingly demanding access to very detailed economic and social statistics, whether they be by industry or geography or activity – sometimes down to the micro-record. At times, countries need to suppress information in order to protect the confidentiality of the respondents. In an age of globalization and digitalization where goods, services, transactions and activities cross borders, suppression in one country limits the picture of the global chain. Countries need to find ways to reduce the amount of suppression in official statistics. Part of the role of NSOs is to determine ways to maximize the release of its information holdings while respecting the confidentiality provisions of the statistical legislation. For most statistical agencies, rules around confidentiality and data suppression were developed 30 to 40 years ago. These approaches, methods and the associated risk tolerance needs to be reviewed.

8. While confidentiality rules may have been systematized and embedded in methods, at their core they reflect the agency's judgement and risk tolerance when the methods were developed. Risk tolerance can change over time. For example, many statistical organizations have dominance rules in place that state if a firm contributes more than X% to an aggregate measure, the information should be suppressed. The 'X%' in this equation is subjective and reflects the risk tolerance of the agency at the time when the method was developed. Statistical processes have become increasingly complex and individual and business notions of privacy and confidentiality have shifted widely in the last decade. These factors combined with the fact that the current confidentiality rules are not all written into law but are constructs of the NSO call for a re-examination in the NSOs approach in identifying which data should be suppressed for reasons of confidentiality.

Establish the infrastructure to exchange information

9. A proper statistical infrastructure (legal acts, strong and independent institution, human and financial resources, expertise in statistical methodology, etc.) is a pre-condition for collecting and disseminating high-quality statistics. Only then sharing those data with other countries is meaningful.

10. As was noted earlier, most statistical laws permit some form of data sharing. Historically, most NSOs have not pursued or taken advantage of these components of their legislation. As such, the data exchange infrastructure has not been developed in most countries. Legal arrangements, information technology and governance are limited or non-existence. As a way to move forward NSOs should dedicate resources to:

- Develop the legal agreements that permit the exchange of data

- Establish secure transfer and processing networks that enable the exchange of information.

- Establish governance mechanisms to oversee the exchange and adjust as necessary.

Extend the mandate to access data existing in society

11. Given the wide range of data that are now freely available on the internet, within company reports, or for sale – NSOs should consider collecting key information from those

sources. If purchasing data, it should be done in such a way that the agreements permit the exchange of information for statistical or quality control purposes among producers of official statistics. However, statistical law should aim at giving NSOs free access to private data holders' data. NSOs could add their statistical expertise to these data and structure them in such a way that the data would be easy to understand by the receiver of the information. We are not far from a world where the accounting information for a significant number of global firms can be obtained on the internet with the NSO adding value by standardizing the information, aggregating and mapping it to international classification systems and statistical frameworks.

B. RESOURCE ASPECT

1. Obstacles related to resources

High costs and time needed to start data sharing

12. Statistical offices face time and budget constraints, and data sharing initiatives can further strain available resources. When these initiatives are first put in place, there usually is no existing infrastructure in terms of workflow and systems for data exchange. Therefore, engaging in data exchange requires substantial resource investments to kick-start the data sharing.

Lack of resources dedicated to data exchange and analysis

13. Statistical offices are typically tuned for regular production of statistics according to a standard process. Offices do not have resources earmarked for data exchange. It requires time to find out what data are available for exchange, who has the data, what part of the data is useful, and in what format the data are. The next step is to figure out whether the data could be accessed for statistical purposes and under what conditions. What kind of agreements are needed, and how to organize the data flow in a secure and efficient way. How interoperable are the datasets? Many questions need answering which requires time and skill.

Large technical investments needed

14. Even after the infrastructure for data exchange is in place, substantial resources might be needed for validating the resulting linked data. Once data are exchanged, they need to be analysed to make them useful. The setup and maintenance of data sharing infrastructure, and posterior data validation, can be very resource intensive. To further complicate things, it sometimes is not clear what resources each of the parties involved is expected to contribute.

2. Solutions for the lack of resources for data exchange

Higher efficiency and cost savings in data collection

15. Once the groundwork has been laid, subsequent data sharing projects have lower start-up costs. Even within the same data sharing project, once the initial data linking work has been completed, the costs of continuing the project can be substantially lower. For instance, once two data sets containing information on the same entities have been linked for a "base year", linking for subsequent years can be less resource intensive if most of the entities remain in both data sets.

16. Furthermore, an ongoing data sharing has the potential to free up resources by reducing the affected parties' data collection and/or validation costs, and by bringing efficiencies in the form of faster correction of errors and discrepancies thanks to using e.g. mirror data or additional data sources.

Shared solutions for data exchange

17. Different offices are likely to encounter somewhat similar challenges when engaging in data exchange. Therefore, sharing of standard tools and lessons learned across countries would be beneficial. Sharing solutions that have proven useful in data exchange, would increase the efficiency and lower the costs of setting up data sharing mechanisms. Pilot data sharing projects could be used as a platform to test and develop tools for data exchange. Similarly, clear division of work in data sharing between parties makes the work more efficient and enables anticipating how much each party is expected to contribute. Examples of the roles of different parties of data exchange could be defined.

Dedicated resources for data exchange and analysis

18. To succeed, data exchange needs dedicated resources, and persons assigned the responsibility to develop and carry out data sharing and analysis. The organizational units dealing with large and complex enterprises (LCU) or other units dealing with data collection, could be assigned the responsibility over data exchange. Substantive domains could then work together with the LCU or another unit in charge to launch data exchange, if and as the need arises.

C. DATA LINKING ASPECT

1. Obstacles that relate to data linking

No common identifiers nationally or internationally

19. Lack of common and global identifiers affects the possibility to share easily data on MNEs. This greatly hampers the exchange of economic data generated by the multinationals. Legal units (LEUs), enterprises and enterprise groups should have common identifiers within and across countries to enable data linking.

Different data collection units, concepts and classifications

20. Using different data collection units, concepts and classifications is a statistical problem. The MNE reporting and systems are primarily intended to share information with stakeholders and not necessarily in line with statistical concepts. Units of administrative data sets not always coincide with units needed for the compilation of statistics. Furthermore, enterprises use different methodologies to derive information on parts of their enterprise group structure for statistics. These practices may differ from one respondent to another, which may affect data comparison.

Scattered and unidentified sources of data

21. Scattered and unidentified sources of data may invalidate the possibility to exchange data. Currently, it is not possible to offer a global and common view on multinational enterprises and it is even not possible to sum up data available from different dataset of

different agencies, countries and domains. A lack of structured and organized metadata also makes it more challenging to resolve differences among data sources and data gaps.

2. Solutions for better data linking

Developing common and unique identifiers

22. There are some encouraging experiences of developing international systems with common and unique identifiers for legal units, enterprises and enterprise groups. For example, the Euro Groups Register (EGR) Identification Service is an application supporting the EGR producers in identifying legal units. The legal entity identifier number (LEID number) is the unique identification number assigned by the EGR Identification Service. Another interesting example is GLEIS (Global Legal Entity Identifier System), an initiative launched in 2011 by the Financial Stability Board (FSB) (see also the section on the process aspect).

Extending application of harmonized units, concepts and classifications

23. The system of international statistical classifications is probably the best example of the efforts made during the last decades to develop a worldwide coherent framework for measuring activities, products, occupations etc. For statistical units, the current situation presents some perplexity but probably the main problems are related to the failed application of some definitions and the absence of a common anchorage to the same theoretical framework. Using more harmonized enterprise and institutional unit concepts worldwide, and collecting and compiling statistics accordingly, would enable easier data linking. It would also be necessary to apply the same language when exchanging data on changes in corporate structures. Common reporting conventions for MNE’s on (cross border) intra MNE operations and positions could improve data sharing.

24. Furthermore, other than statistical organizations increasingly collect and classify data. These organizations would benefit from the expertise and available definitions and tools to classify data, as far as applicable. In the longer run, statistical offices could also benefit in data linking from advocating their concepts and classifications for wider use.

Mapped and linked data sets

25. Developing a system of mapped, and potentially also linked datasets, is the main prerequisite for effective data management. A mapping in terms on statistical units and variables could help in understanding what data are available and where. An effort made to create common identifiers, would pay off better if data sets where then mapped to see more easily the possibilities for linking. Mapping should include the storage of metadata: origin of the data; original sources used; frequency; versions etc. Having mapped and linked data sets, would enable richer analysis and support learning more about the economy without increasing burden on respondents.

D. SUBSTANTIVE ASPECT

1. Obstacles related to substantive statistical work

Difficulties to collect national data in the context of globalization

26. Exchange of data between countries would require prior collection of good quality data by the national statistical institutes. Difficulties with expertise on globalization, surveying of

MNEs, response rates and legal and administrative capacity of the statistical office may hamper data exchange.

27. The increasing share of international transactions undertaken by MNEs is an important feature of globalization which potentially causes most measurement problems. Statistical measurement is based on national concepts, it is therefore increasingly difficult for national statistical institutes to collect data from MNEs at a national level as more and more enterprise groups no longer account their financial data by physical establishment or production units, as required by national statistics. MNEs often report performance by geographical regions or activity based segments.

Poor understanding of the data needed to capture global activities

28. In the recent years, the understanding of critical variables needed to treat global activities of enterprises correctly in statistics has increased notably, not least due to the guidance on globalization and global production, developed by UNECE, Eurostat and OECD with member countries. However, the lack of full understanding of data needed to capture global activities of enterprises remains an issue in many countries. In order to make exchanged data useful for the receiving countries, national data should include the necessary data elements on the international engagement of enterprises. Globalization is a complex and evolving phenomenon that requires the analysis of various data items, and different data sets for each statistic. Regular mechanisms to enable learning and monitoring of MNE activities are not yet commonly in place. Even if the infrastructure for data exchange would exist, the data items to be exchanged might need to be found by trial and error.

Difficulties to capture MNEs' activities correctly

29. Breaking down the activities and structures of enterprises involved in a global production chain globally or for an individual country is a challenging undertaking. It might even be easier to describe all structures of an MNE globally first without focusing on country boarders. A number of decisions need to be made when delineating an MNE's activities into a single country that could make international data comparison more difficult afterwards. In practice, the principles of MNE profiling for statistics also differ in each country based on the methodological choices, data availability etc.

2. Solutions towards improved substantive statistical work

Meaningfulness of world level data

30. The increasing meaningfulness of world level data instead of national data should not be undermined. The fact could be used to increase efficiency and quality of MNE profiling and thus improve the quality of data to be exchanged. International organizations could organize more systematically platforms aimed for the review of the largest and most critical MNEs in joint ventures with statistical experts from countries concerned in each case.

Good understanding of critical data items

31. The Task Force has discussed the critical data items that should be exchanged internationally and nationally to measure economy better in the conditions of globalization. In addition, metadata containing information concerning the reporting units, coverage of the surveys, response rates, important non-responses, estimates, etc. should accompany the dataset as they are necessary in order to make use of the received data. In any data exchange, meetings

with the experts involved in data exchange as a receiving or providing party should meet, if possible, and discuss the qualities of the data and the related limitations.

Better understanding of MNEs through profiling

32. A better understanding of the structure of MNEs, and how it changes over time, will improve the quality of statistics on MNEs. One of the tools to deal with these issues is profiling. Profiling is a method to analyse the legal, operational and accounting structure of an enterprise group at national and world level, in order to establish the statistical units within the group, their links, and the most efficient structures for the collection of statistical data. International profiling has as a goal to analyse the MNEs, regardless borders and sharing of data between statistical offices is a vital ingredient in this process.

E. PROCESS ASPECT

1. Obstacles related to the process of data exchange

No Global Groups Register

33. Countries' statistical authorities produce the vast majority of statistics. Traditionally, statistics are based on surveying, but nowadays more and more on the use of multiple data sources. However, statistical processes very rarely cut across countries, unlike the activities of MNEs. 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 general better understanding of the globalization flows and their impact.

34. The Euro Groups Register (EGR) is a unique statistical business register, covering at supranational level multinational enterprise groups. The EGR contains micro-data for more than 60 000 enterprise groups and around 800 000 legal units which are partially or fully active in the EU.

Production processes are not synchronized

35. Data sharing necessarily increases NSOs' dependency on external data sources and providers. Basically before initiating data sharing, the production has been optimized at the institutional level. That is, there exist poor synchronization of production among organizations at the national and international level. Data exchange may not always be a one-off exercise. The production of high-quality statistics may call for regular exchange of data among certain producers of statistics, or from administrative data providers to the statistical office. The latter cases are already well-managed in many countries, but it is less common to extend the regular data collection process to authorities in other countries.

Poor timeliness of data exchange

36. As the processes of different data providers and statistical authorities are not linked, data may become available at the wrong time. Also sharing of data consumes time, and by the time newly exchanged data becomes available, the statistic may be released already. The many examples analysed by the Task Force highlight, that when NSOs start sharing data, they soon find out that it is difficult to align processes with other involved organizations.

2. Solutions to improve processes

Extending the idea introduced by the Euro Groups Register

37. The Global Groups Register (GGR) could build on the existing content and processes of the Euro Groups Register (EGR). The information for the global register should be complemented by better information on groups, collected through global profiling.

38. The Global Legal Entity Identifier System (GLEIS) initiative could be used to establish unique identifiers in the GGR. GLEIS will go beyond the simple identification of entities. Idea is to further expand the GLEIS with the level 2 information, i.e. data on direct and ultimate parents of legal entities. Once level 2 information becomes available, its possible use for a future GGR will have to be investigated. GLEIS should be tested with EGR. and the differences with the EGR results should be analysed and may indicate a way forward on the construction of the GGR.

Defined and agreed data exchange process

39. Moving towards defined and agreed data exchange process and regularized data exchange in key areas entails that the production process is well-planned and organized together with the data sharing counterparts. Developing a description of the main steps of the data exchange processes might be useful for this purpose.

Timed data exchange in critical areas

40. The differences in timeliness of statistical production across countries should be reviewed and resolved in collaboration to the extent possible. NSOs need new tools, such as agreements or regulation whereby the NSO should be consulted, if changes in data sources or the data collection schedules are planned. Also this implies continuous relationship building and networking with data providers to better anticipate all changes that can take place in the source data.

F. CULTURAL ASPECT

1. Obstacles related to the cultural aspect

No buy-in from management of the statistical office

41. Sharing and exchange of economic data is a new approach to statistical production, and includes risks as well. It may be that the top management does not feel ready to engage in data exchange due to the related risks of confidentiality breaches and possible damage to the image of official statistics. Having no buy-in from top management of the statistical office might due to several reasons. Usually, this also means that the significance of data exchange activity is not understood well enough, or the risks of not engaging in data exchange to the quality and accuracy of key economic statistics may be undermined. Regular data exchange may also require internal guidance and changes to the compilation processes, which is also a resource issue.

Lack of trust between counterparts in data exchange

42. Lack of trust between counterparts of data exchange may prevent data sharing. A statistical office that exchanges its data with a statistical authority of another country still bears

the responsibility over data security. If a breach occurs, it may hamper the trust of respondents and the image of the statistical office that engaged in data exchange.

Lack of willingness among respondents

43. Statistical offices are also worried about losing respondents' trust and willingness to report sensitive data for statistics. If data are not in the full control of the national statistical authority, respondents may be reluctant to provide their data, and could fear that their data are used for other than statistical purposes internationally. Respondents might not even agree to their data being exchanged among statistical authorities nationally.

2. Solutions to cultural obstacles

High-level commitment to data sharing

44. The choice to review and update confidentiality rules, draft data exchange policies, develop necessary systems, put in place governance and initiate legislative review is in the hands of the management of the statistical organization. Each of these activities requires a substantial amount of effort and each requires the consideration of risks.

45. Small steps and successful experiences are probably the best way to demonstrate to the top management that data exchange is the way forward in the globalized world. Exchange of individual data cannot happen without the approval of the Head of NSO or another statistical authority. Furthermore, management needs to ensure sufficient resources for the work, and support the necessary initial investments in technology, process improvements and methodology development.

46. International data exchange will only happen if the top management of NSOs are open to and have a willingness to:

1. amend legislation if needed
2. harmonize practices with other NSOs
3. coordinate data analysis and exchange across statistical domains
4. adapt processes with counterparts in data exchange
5. consult with respondents and data exchange stakeholders
6. implement quality control measures and analyse data
7. incur costs, especially when launching new data exchange

Close collaboration with counterparts in data exchange

47. Lack of trust could be overcome by establishing closer collaboration between key stakeholders involved in data exchange. This is already true in many countries that have a well-established collaboration with administrative bodies providing individual data for statistical purposes, some of which is very sensitive in nature and may be treated as confidential in the respective legislation. International organizations are key players in promoting cultural change, providing discussion fora and sharing successful country experiences. These fora should bring together various statistical authorities, such as statistical units of Central Banks, Ministries of Finance and Customs, to discuss practical needs for data exchange and share success stories and lessons learned.

Shared evidence on reductions in response burden and quality improvements

48. The results of data sharing should be measured in quantitative terms to show how the asymmetries were decreased and quality of statistics improved as a consequence of data exchange. Respondents' trust would be easier to achieve if statistical authorities could show measured decrease of response burden as a result of sharing data between NSOs.

G. RISK ASPECT

1. Obstacles related to risks of data sharing

Increased dependency from external data

49. The new situation NSOs are facing generate new risk situations that could prevent the exchange of individual data among authorities. The operative risks relate to the use of external data sources that are provided by other organizations. While it reduces costs and response burden and increases efficiency of statistical production, using external data sources also increases dependency. The provider of data could change its data collection in a way that could significantly hamper access to the necessary data, or it could change the frequency of data collection or decide to stop the data collection altogether. Especially when using private data sources or internet as a source of data, the availability, formats and content of data may be constantly changing.

Risks to respondent relations

50. Statistical offices may be conscious of possible risks to its respondent relations when engaging in the exchange of individual data. The risk of confidentiality breaches need to be minimized in every possible way. According to the survey of national statistical offices, risks of confidentiality breaches had realized in extremely rare cases. But the impact could be harsh on the image of NSO as a solid and trustworthy organization. This in turn could influence the behaviour of respondents and, thus, the quality of data collected for statistics.

Risks to the image of official statistics

51. Other perceived risks of data exchange relate to the public image of NSOs. People might feel that their privacy is at stake, if any risks of data exchange realize. In such case, the NSOs' image as a transparent and impartial organization that guarantee the quality of the statistics and confidentiality of personal data may suffer.

2. Solutions for avoiding risks of data exchange

Coping strategies for using multiple data sources

52. NSO's should build trust and enhance cooperation between NSOs and organizations that provide them data for secondary use. This should be done both nationally as it comes to using secondary national data in statistical compilation and internationally as it comes to using data collected by other countries' NSOs or their other statistical authorities.

53. Cooperation with secondary data providers is a somewhat different way of action as compared to NSOs' traditional way of organizing their relationships with respondents that only provide their own data for use exclusively by the NSO.

54. The practical measures to increase control over data provided by other authorities may include:

- Establishing a system of frequent contacts with data provider organizations (national or from other countries) and ensuring that networks and contact points exist at different levels of the organizations, both at the managerial, strategic level and at the operational level.
- Establish formal contracts and memoranda of understanding between the organizations. Ensure that all parties involved understand the importance of data that is being exchanged.
- Ensure that statistical compilation systems and production processes are capable of handling missing data also when the secondary data sources are not available.
- Legislation may include provisions to require that all data providers consult the statistical authority in advance of any significant changes to their data collection if it may influence statistical production.

Good communication and trust with respondents

55. NSOs should build trust and enhance cooperation between NSOs and enterprises that provide them with data that are crucial for sharing with other countries' statistical authorities.

56. The practical measures to establish such cooperation to enhance trust may include:

- Establishing a system of frequent contacts with the data providing enterprises or their representatives to ensure that networks and contact points exist at different levels of the organizations, both at the managerial, strategic and at the operational level. One way of doing this, would be to establish a separate unit or function within the NSO that would have as its specific task the management of relations and data provision with large and complex enterprises, a so-called Large Cases Unit (LCU).
- Establishing formal contracts and memoranda of understanding with the enterprises or their representatives and ensure that the contracts also cover the issue of reuse of data by other NSOs exclusively for statistical purposes.
- Ensuring and demonstrating that the same confidentiality and data security principles as with traditional data also apply in cases where secondary data are being used in the compilation of statistics and further reused by other NSOs. Therefore, any data entering the national statistical system should be treated according to the principles that apply to data collected by the statistical office. One way of demonstrating that data security principles are adequate is that the NSO certifies its production processes by a recognized standard such as the ISO/IES 27001.
- Ensuring that also the other countries' NSOs that reuse the data have a strict legal framework in place to ensure statistical confidentiality.
- Ensuring that respondents are informed of the use of their data, for instance exclusively for statistical purposes by the statistical authorities in the country, and in other countries, if needed for statistical purposes. In case there would be a breach of confidentiality or data security, the statistical office that exchanged the data should take all measures to minimize the damage and inform the respondent concerned of the issue and the consequences of the breach.

Risk management tools and enhanced communication

57. It would be important to have a communication plan and a set of risk management tools available to ensure that the general public is well-informed of the activities of the NSO also in terms of data exchange and measures to safeguard privacy. Statisticians should work internationally to develop common tools for communication and risk management in the area of exchange of data.

58. NSOs should ensure and demonstrate that the same confidentiality principles as with traditional data also apply in cases where secondary data are used in the compilation of statistics. They should inform the public that data are exchanged exclusively for statistical purposes with recognized statistical authorities of other countries, and only if a legal framework is in place to ensure the strict confidentiality of statistical data.

H. UNCERTAINTY ASPECT

1. Obstacles related to the uncertainties around data exchange

Lack of information about data exchange options

59. International data sharing is a relatively new activity. Staff in statistical offices may have limited knowledge of the options for data exchange. This may include for instance, how exactly it works, what are the resources involved, what types of agreements between the participating organisations it entails.

Lack of information about benefits

60. Statistical offices may not be fully aware of the potential benefits of data exchange. Then it may be difficult to weight the benefits against the potential risks of data exchange. International sharing of experiences from different types of data sharing would be helpful.

Uncertainty about impacts on the quality of statistics

61. The lack of sufficient information is likely to discourage initiatives of data exchange, especially as it generates uncertainty concerning the possible impact on the quality of statistics. So far, the impact of data exchange has been demonstrated through individual data exchange cases, but the outcomes have not yet been fully analysed.

2. Solutions for addressing uncertainties

International platforms for collaboration

62. The development of international platforms for sharing information on data exchange, including on concrete country practices, would contribute to raising statistical offices' awareness and knowledge of data exchange. Moreover, the creation of platforms for the actual exchange of data, such as the Foreign Direct Investment (FDI) Network of Eurostat, have proved successful in facilitating, via a technical infrastructure, the secure exchange of data.

Examples of successful data exchange

63. The Task Force is analysing examples of successful data exchange to quantify the impact on statistics. These cases include the exchange of cross-border transactions data, in

particular the bilateral exchange of import data between Statistics Canada and the Bureau of Economic Analysis of the United States; and multilateral exchange of export data by EU member states (SIMSTAT programme) among others.

Proven improvements in quality

64. The analysis of the above data exchange initiatives shows that data exchange helps to reduce asymmetries and improve the quality of statistics. The cases on import data and SIMSTAT show the notable quality improvements on trade data. Similar mirror exercises have been done with migration data that have proven most useful for addressing asymmetries of migration flows regionally and internationally.

I. KNOWLEDGE ASPECT

1. Obstacles related to the knowledge aspect

Lack of necessary methodological knowledge

65. The knowledge covering data exchange and analysis is generally limited in countries due to lack of practical experience. Data exchange requires specialist knowledge about data formats, technologies, linking, coding, data mining and different concepts and classifications. Staff need to develop their ability to understand data, concepts and classifications used across various statistical domains to analyse an individual MNE. Such work would require a good understanding of business accounting.

Limited data mining skills

66. One of such areas of limited skills is data mining. Such limits may hamper exchange of data. Nowadays, the approach of producing statistics based on one data set does not always apply. Instead, many sources with varying formats of data may be used in the compilation of one statistic. Yet, statistical offices reported in the UNECE survey the need to improve their data mining skills. This would also include improving the knowledge of data sets and sources available in society.

Lack of knowledge about resolving discrepancies

67. In some countries, the centralized data analysis function has been helpful in improving knowledge about ways to resolve discrepancies and reconcile data. Some statistical office operating in silos of individual statistics do not have a strong tradition of combining and reconciling data across subject matter areas.

2. Solutions for improving knowledge

68. The necessary knowledge for data sharing could be improved in all the above areas by:

1. Setting-up an LCU - the process will itself start to develop such knowledge, e.g. profiling, sharing data, agreements, learning of company structures, company accounts, etc.
2. Study visits to those countries with established LCUs would be helpful. Establish on-going dialogue and an exchange of skills and knowledge.
3. Set up an international information sharing forum. These could work through reviewing case studies and, thus, linking theory and practice.

4. Utilise data science experts to develop data mining skills in statistical offices.
5. Set up seminars to include presentations from MNEs in order to understand from their perspective the issues, operating models, etc.
6. Develop training sessions and programmes.

69. Well-developed methodologies for data linking and good data mining skills can enable the exchange of individual data. Practical examples of successful data exchange and reconciliation can provide useful models for developing regular practices in offices.

J. TECHNICAL ASPECT

1. Obstacles related to the technical aspect

70. The nature of the data we want to exchange as it is seen today encompasses:

- Ad-hoc data requests based on cases being detected rather than regular data exchange or reporting.

- Unknown or changing list of recipients depending on the specific case (i.e. potentially affected economies): the data should be sent to as little stakeholders as possible and to as many as required ("need to know" principle).

- Data coming from various sources, in some cases volatile: it would usually be related to official statistics (e.g. GDP levels), but might need to be linked with sources such as company data or estimates from other public stakeholders such as ministries.

71. In the current work of national statistical offices, data exchange does not happen very often. Thus, there is some lack of experience with data exchange procedures.

Insecure environments of data exchange

72. If the statistical office is uncertain about the security of available IT platforms between partner organizations, data exchange may not take place. Both the NSO’s and the other party’s IT systems need to be able to ensure data security, as well as a secure transfer between the two systems.

Different data storage and exchange formats

73. Organizations have different capacities for data management. For some it is a priority, while some organizations do not invest in up-to-date technology and formats. These differences cause practical problems in data linking and transfer.

High computing capacity needed

74. Some statistical offices may not have such computing capacity needed to exchange large data sets. Especially, regular exchange of individual data of large business populations requires a solid IT capacity and environment. Difficulties may be experienced especially if individual data held by authorities of several countries needs to be combined.

2. Solutions for addressing the technical challenges

Secure technology for data exchange

75. Technological tools for data exchange should be shared and, where need be, developed jointly among statistical offices. The following modes of data exchange could be useful:

- Mesh: Senders offer secured web services to access datasets. The structure used refers to the agreed structure. Based on the authentication, the actual data offered depends on the request. Receivers can only access data that they are authorized. The sender has full control at any time. Secure web service end point either remain active in order to be able to exchange data any time or can be activated for a specific time window based on the needs of a specific case.

- Hub: a central agency manages an access point to several data providers. Requests are sent to the central access point and requests are distributed automatically. The hub itself does not hold data.

- Centralised: data is sent to a central agency which stores the data and can give access to receivers as authorized.

Common data storage and exchange formats

76. The counterparts of data exchange should work together to create standardized data structures and use common definitions, units and classifications. Such collaboration needs to be continuous if data need to be exchanged regularly.

77. It is useful to apply well-established standards such as:

- Statistical Data and Metadata eXchange (SDMX) for describing the target data structures

- Common statistical production architecture (CSPA) for describing statistical data architecture

High performing computing environment

78. While individual statistical offices may have a limited computing capacity even nowadays, different service providers may prove helpful. In case high computing power is needed, a centralised, trusted agency with a secure high performing data centre can be chosen. In cases where data exchange is ad-hoc and only to a small list of receivers, the mesh might be the best solution.

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