Countries’ experience in the exchange of economic data

Rami Peltola, UNECE
Exchange of economic data
Need for international work arises

- Group of Experts on National Accounts 2015 and 2016:
  - Data exchange is essential for measuring global production
  - Asked international organizations to facilitate data exchange
  - Called for data confrontation within and between countries
  - Underlined data exchange as a means of proper data validation
  - National circumstances, challenges and risks need to be considered

- Bureau of the Conference of European Statisticians (CES):
  - Decided to undertake an in-depth review of the exchange and sharing of economic data
  - Statistics Finland agreed to lead the in-depth review
  - UNECE and Statistics Finland decided to carry out a survey
The survey of national statistical offices (NSOs):
- Carried out in April 2016 among CES member states
- All together 48 statistical offices replied to the survey

The aim was to:
- Cover national and international exchange of economic data
- Collate experience, concerns and challenges
- Review current institutional arrangements
- Collect information on gaps and ideas for international work

The survey included the following parts:
- Scope of economic data exchange
- Organizational aspects
- Benefits and challenges
- International activities and national capacity
Scope of economic data exchange

National data sharing

- All offices exchange data at the national level
- Exchange of aggregated data is most common (83%)
- Typically NSO is the receiving party for micro-data
  - Mostly from other producers or administrative sources (75-79%)
  - Almost half receive micro-data from commercial sources (48%)
- It is common to provide micro-data for research (65%)
- Only half provide micro-data to other producers
  - Over 80% provide data as aggregates
- One third of offices examine multinational enterprises (MNEs) with other producers of statistics nationally (33%)
Almost all offices have exchanged data at the international level (94%)
- Most exchange aggregated data (81%)
- Micro-data exchange is less common (38%)

Types of data exchanged internationally:
- Data collected for official statistics (77%)
- Administrative data (35%)
- Commercial data (15%)

International data exchange is most often bilateral (77%)

Exchange is typically carried out regularly (79%), but half also exchange data ad-hoc

Less than one third of offices examine MNEs with NSOs from other countries (27%)
Organizational aspects
Enablers and limits of data sharing

- Some offices have assigned exchange of economic data to a single unit (29%)
  - Some large and complex enterprises units (LCU) coordinate data exchange
  - National accounts have a coordinating role in some countries

- National legal framework regulates data exchange in 90% of responding countries

- Two thirds introduced new cooperation mechanisms, agreements or legislation (65%)
  - Data sharing agreements are common with administrative data providers

- Common business and personal identifiers are widely used (77%)

- The role of common statistical business register highlighted as an important tool for data exchange!
Benefits and challenges

Benefits and successful cases

- Most offices reported better quality of statistics in terms of:
  - Coherence across statistics (88%)
  - Relevance, accuracy and timeliness (81%)
- Two thirds experienced efficiency gains and reduced response burden (67%)
- Half achieved better understanding of complex enterprises (52%)
- Countries shared some success stories:
  - Joint data collection between the NSO, Central Bank and Customs
  - Significant improvements from data exchange in the area of foreign trade
  - Research using statistical data provided visibility and prominence to NSO
  - Reduced asymmetries due to international data exchange
  - Increased integration between statistics

Benefits from national and international data exchange

- Better quality such as relevance, accuracy, timeliness (81%)
- Improved consistency of data across statistics (88%)
- Better understanding of complex enterprises (52%)
- Efficiency gains in statistical production (67%)
- Reduced response burden (67%)
Benefits and challenges
Challenges and difficulties

- Confidentiality constraints are the main challenge for data sharing (67%)
- In most countries the current legal frameworks limit data sharing (60%)
- Half experience gaps in technological readiness to exchange data (48%)
- Some offices are also concerned about a decrease in respondents’ trust (17%)
- Other difficulties mentioned by 23% include:
  - Increased dependency from external data
  - Problems in linking international data
  - Lack of human resources to do this work
  - Differences of units across data sources
  - Source data quality
  - High investment costs

### Difficulties in national and international data exchange

- Legal constraints: 60%
- Confidentiality constraints: 67%
- Technological readiness to exchange data: 48%
- Decrease in respondents’ trust: 17%
- Other difficulties: 23%
Benefits and challenges

Risks that have realized

- Risks of data exchange have rarely realized but are potentially very damaging
- Problems relate to data quality being judged as poor (23%) or misinterpretation (21%)
- Some cases with confidentiality breaches (15%) or data not well anonymized (13%)
- Microdata have been used for other purpose than agreed in some cases (10%)
- Partner’s ability to use data was low (8%)
- Individual cases where:
  - Respondents’ trust diminished
  - NSO reputation suffered
  - Microdata misused for personal gain

<table>
<thead>
<tr>
<th>Risks of data sharing that have realized in practice</th>
<th>0%</th>
<th>5%</th>
<th>10%</th>
<th>15%</th>
<th>20%</th>
<th>25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidentiality of individual data breached</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15%</td>
</tr>
<tr>
<td>Individual data not sufficiently anonymized</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>Respondents’ trust diminished</td>
<td></td>
<td></td>
<td></td>
<td>4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microdata used for other purposes than agreed</td>
<td></td>
<td></td>
<td></td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microdata misused for personal gain</td>
<td></td>
<td></td>
<td>2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data misinterpreted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>21%</td>
</tr>
<tr>
<td>Data considered of poor quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>23%</td>
</tr>
<tr>
<td>NSO reputation suffered</td>
<td></td>
<td></td>
<td></td>
<td>4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partner did not have competence to use data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Other risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4%</td>
<td></td>
</tr>
</tbody>
</table>
International activities and national capacity
Priorities for international work

International organizations should facilitate progress in data exchange, especially by:
- Developing common methodologies to ensure confidentiality (65%)
- Sharing technological solutions and tools (63%)
- Developing guidance for data exchange (56%)

It would be useful to:
- Discuss data exchange at expert meetings (44%)
- Collect good examples of successful data exchange cases (38%)
- Review obstacles of data sharing (25%)

Guidance is needed in particular on:
- Drafting legislation and agreements that facilitate data exchange and ensure confidentiality
- Common data exchange standards, rules and procedures across countries
- Modern tools and software for data exchange
- Reconciliation methodologies and recommended practices with MNEs

---

**International activities to facilitate the exchange of economic data**

- Discussions at future expert meetings: 44%
- Collecting good examples of successful data exchange: 38%
- Sharing technological solutions and tools: 63%
- Developing general guidance for data exchange: 56%
- Developing methodologies to ensure confidentiality: 65%
- Reviewing obstacles of data sharing: 25%
- Preparing training materials on data exchange and…: 21%
- Other: 2%
International activities and national capacity
National capacity for data exchange

- Capacities ranked highest included:
  - Capacity to ensure confidentiality (48% - high)
  - Ability to analyse data (44%)
  - Technological capacity (38%)
  - Awareness of relevant data sources (38%)

- Capacities ranked lowest included:
  - Skills in data mining and linking (10% - low)
  - Technological capacity (8%)
  - Capacity to ensure confidentiality (6%)
  - Awareness of relevant data sources (4%)

- Weaknesses and strengths varied greatly across countries
- Data mining skills need improvement also in many advanced offices
Conclusions
Key findings from the survey

- The survey provided rich information
  - More details in the paper
- A trend towards increased exchange of micro-data nationally and internationally
- Clear benefits from data exchange
- Challenges, limits and risks need to be addressed together
- Common methodologies, guidance and tools needed

<table>
<thead>
<tr>
<th>Exchange of micro-data at international level</th>
<th>Reuse of micro-data at national level</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>27</td>
<td>18</td>
</tr>
</tbody>
</table>
Thank you!

Rami Peltola
UNECE