Regional Course on Statistical Business Registers

Session 3: Introduction to SBRs (continued)

- Statistics & Research
- Other roles of SBRs
- UN Guidelines on SBRs
Overview

Session 2 covered the role of an SBR as a live register and as a coordinator of surveys

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Session 3 will cover the potential additional roles of an SBR

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This Session will also review the United Nations Guidelines on SBRs
Additional Roles of the SBR

Statistics and research

• SBR-derived statistics
  o Business demographics
  o Integration with domain-specific registers
• SBR as a direct source of data

International data exchange

Modernization of statistical production and services
Statistics and Research

Why use SBRs?

• Increasing demand from governments, international organizations and researchers for business statistics
• Information provided must be consistent and comparable
• NSOs looking to reduce data collection costs and response burdens
Statistics and Research

SBR-based statistics

• Business demographics (births, deaths, etc.)
• Integration with domain-specific registers, i.e. trade

SBR as a direct source of micro-level data/individual information

• SBR regulatory framework
• Lists of enterprises, ownership and control information, etc.
Statistics & Research

Business demography statistics

Provide data on the development of the business population over time and the core variables that describe this development.

Focus is on the birth of new businesses, the survival of newly created businesses and the death of businesses.

- **Birth rate**: newly born businesses in t as percentage of all active businesses in t.
- **Survival rates**: percentages of businesses born in t that are still active in t+1, t+2, t+3, etc.
- **Death rate**: businesses closed in t as percentage of all active businesses in t.
Statistics & Research

Business demography statistics

Can be broken down by:

- Economic activity (ISIC)
- Legal form
- Size or rate of growth (employment or turnover)
- Region

Sole proprietorships/owner-occupiers:

- Can be analyzed by characteristics of the entrepreneur i.e. age, gender

Other groups of interest, i.e. “gazelles”
Business demography statistics

Populations used:

- All businesses ("business demography")
- Businesses with at least one employee ("employer business demography")
- Businesses with at least two employees ("economic business demography")

Using all businesses is most comprehensive, however excluding self-employed businesses increases international comparability.

Requiring 2+ employees guarantees to exclude cases where the entrepreneur is counted as an employee.
Statistics & Research

Business demography statistics

Example of SBR-derived demographics from the UK

**Figure 1: Birth and death rates of businesses**

**Table 3: Comparison of business births by industry and employee size bands**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Business Demography</th>
<th>Employers Demography</th>
<th>2 or more employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>15,325</td>
<td>13,060</td>
<td>4,420</td>
</tr>
<tr>
<td>Construction</td>
<td>49,390</td>
<td>44,295</td>
<td>13,355</td>
</tr>
<tr>
<td>Motor trades</td>
<td>7,570</td>
<td>7,025</td>
<td>2,095</td>
</tr>
<tr>
<td>Wholesale</td>
<td>10,765</td>
<td>9,800</td>
<td>2,160</td>
</tr>
<tr>
<td>Retail</td>
<td>29,420</td>
<td>27,700</td>
<td>8,410</td>
</tr>
<tr>
<td>Transport and storage (inc. postal)</td>
<td>36,460</td>
<td>20,760</td>
<td>6,955</td>
</tr>
<tr>
<td>Accommodation and food services</td>
<td>28,550</td>
<td>28,055</td>
<td>20,635</td>
</tr>
<tr>
<td>Information and communication</td>
<td>22,455</td>
<td>21,395</td>
<td>5,165</td>
</tr>
<tr>
<td>Finance and insurance (Excl 6420)</td>
<td>2,775</td>
<td>2,690</td>
<td>1,035</td>
</tr>
<tr>
<td>Property</td>
<td>11,825</td>
<td>11,350</td>
<td>3,270</td>
</tr>
<tr>
<td>Professional, scientific and technical</td>
<td>47,445</td>
<td>44,890</td>
<td>10,895</td>
</tr>
<tr>
<td>Business administration and support services</td>
<td>39,965</td>
<td>38,825</td>
<td>13,565</td>
</tr>
<tr>
<td>Education</td>
<td>5,000</td>
<td>4,785</td>
<td>1,795</td>
</tr>
<tr>
<td>Health</td>
<td>10,890</td>
<td>10,780</td>
<td>3,960</td>
</tr>
<tr>
<td>Arts, entertainment, recreation and other services</td>
<td>19,090</td>
<td>17,540</td>
<td>7,705</td>
</tr>
<tr>
<td>Total</td>
<td>336,925</td>
<td>302,950</td>
<td>105,420</td>
</tr>
</tbody>
</table>
Satellite approach

Issues

• Changes in concepts or coverage as a result of SBR maintenance can lead to changes in data unrelated to changes in the real world

• Implementing additional roles can lead to a complex network of databases and functionalities

Possible solution

• Frozen frames from the SBR are linked with other data sources and maintained separately in a satellite register

Benefits

• Reduced complexity of SBR

• Statistics can be produced by those outside the SBR unit

• Can handle more data; not interfere with basic functions of SBR
Statistics & Research

Integration with domain-specific registers

More in-depth statistics can be produced by linking the SBR data with other domain-specific registers.

For example, in trade statistics, the concepts and classifications in external trade statistics differ from those in production statistics.

Coherent compilation of trade statistics by enterprise characteristics requires linkage of trade and business registers at the micro-level.

Combination of the key enterprise characteristics and the trade data offers opportunities for producing a better overview of the structure of both sectors.
Statistics & Research

Integration with domain-specific registers

Example of Tunisia

Customs data was linked to the SBR:

- Imports/exports by company
- Information on the products imported/exported, i.e. value, weight and destination

Also facilitates updates and estimations in the SBR, i.e.

- Estimate turnover based on value of exports for exporting companies
- Estimate main business activity based on most imported/exported products
Statistics & Research

Integration with domain-specific registers

Example of Tunisia

- Customs initially used their own company identifiers
- In 2010, adopted the identifiers used by the tax authorities
- Integration of files now automated
Statistics & Research

SBR as a direct source of micro-level data

Provision of SBR micro (individual) data as open data, publicly available for any individuals or organizations to use and licensed in a way that makes reuse possible

Scope of this role dependent on the regulatory framework:

• Confidentiality and privacy
• Legislative considerations

And dependent on available dissemination infrastructure:

• i.e. Geostatistical
SBR as a direct source of micro-level data

While confidentiality provisions must be observed, much of the enterprise data is public

Ideally the regulatory framework would allow dissemination of:

- **Identification and stratification characteristics**: enterprise name, denomination or corporate name, economic activity class, size class
- **Geographical location characteristics**: street, external and internal number, neighbourhood, postal or zip code, locality
- **Geographical coordinates of the location**: latitude and longitude
- **Contact characteristics**: phone, fax, email, and web page
- **Date of creation** of the unit
Statistics & Research

SBR as a direct source of micro-level data

Geostatistical information

Growing interest in/availability of geographical information systems (GIS)

Coordinates can be assigned to addresses

Possible “information layers”:

- Urban services
- Natural resources
- Hydrographic networks
- Communication routes
Statistics & Research

SBR as a direct source of micro-level data

Geostatistical information

Example of Mexico

Box 2.6
Geostatistical information in Mexico

In Mexico, the National Statistical Directory of Economic Units is a part of the SBR that is available to any user through a free consultation system in INEGI (www.inegi.org.mx/app/mapa/denue/default.aspx). Its geostatistical features have broadened its role as a tool supporting public and private policy developers and decision makers, and also academics and researchers.

Statistics & Research

SBR as a direct source of micro-level data

Geostatistical information
Other Roles of an SBR

International data exchange and comparability
Can allow for harmonization of data to facilitate collaboration across regions

Modernization of statistical products and services
Other Roles of an SBR

International data exchange and comparability

• As globalization increases, the importance of internationally comparable data increases

• SBRs must maintain internal/external coherence

• EuroGroups Register (EGR): example of data exchange network between NSOs
Other Roles of an SBR

International data exchange and comparability

• Confidentiality

• No international standards

• Limited by requirements: data for statistical use only, cannot disclose data about individual units

• Countries responsible for compliance with their own regulations as well as those from sending countries
Other Roles of an SBR

Figure 2: Multinational enterprise groups and employment in EU-EFTA countries by area of control, 2021

*Source: EuroGroups Register*
Other Roles of an SBR

Worldwide presence of multinational enterprise groups controlled by EU and EFTA countries, 2021
Other Roles of an SBR

International data exchange and comparability

Cooperation and trust required

*ECE Guide to Sharing Economic Data:*

- Specific examples of sharing of economic data
- Identifies obstacles
- Provides guidance

https://unece.org/sites/default/files/2021-02/Data%20sharing%20guide%20on%20web_1.pdf
Figure 2.2
Privacy-preserving statistics workflow for the UN Global Platform

Data Subjects
- Organisations
- People

Input parties
- Direct data collection (surveys, scraping etc)
- Data collection via intermediaries (earth observation, payment data, telco data etc)

Computing parties
- National Statistics Office
- Secure data collection (Privacy Enhancing Technology deployed)
- UN Global Platform Aggregator
- Policy enforcement (Privacy Enhancing Technology deployed)

Result parties
- Secure statistical analysis and result disclosure (Privacy Enhancing Technology deployed)
- Global community
- Data owners
- Privacy authorities
- Data use authorities
Other Roles of an SBR

Modernization of statistical products and services

• Modernization:
  o Coordinating and linking different sources
  o Serving as “data warehouse”
  o Improved updated procedures throughout system

• Key elements: efficiency, coherence, interoperability and cooperation

• The Generic Statistical Business Process Model (GSBPM)
  A standard but flexible tool for describing and defining the common set of business processes that typically constitute statistical production

  https://statswiki.unece.org/display/GSBPM/
### Other Roles of an SBR

<table>
<thead>
<tr>
<th>Overarching Processes</th>
<th>Specify needs</th>
<th>Design</th>
<th>Build</th>
<th>Collect</th>
<th>Process</th>
<th>Analyse</th>
<th>Disseminate</th>
<th>Evaluate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Identify needs</td>
<td>2.1 Design outputs</td>
<td>3.1 Reuse or build collection instruments</td>
<td>4.1 Create frame and select sample</td>
<td>5.1 Integrate data</td>
<td>6.1 Prepare draft outputs</td>
<td>7.1 Update output systems</td>
<td>8.1 Gather evaluation inputs</td>
<td></td>
</tr>
<tr>
<td>1.2 Consult and confirm needs</td>
<td>2.2 Design variable descriptions</td>
<td>3.2 Reuse or build processing and analysis components</td>
<td>4.2 Set up collection</td>
<td>5.2 Classify and code</td>
<td>6.2 Validate outputs</td>
<td>7.2 Produce dissemination products</td>
<td>8.2 Conduct evaluation</td>
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</tr>
<tr>
<td>1.3 Establish output objectives</td>
<td>2.3 Design collection</td>
<td>3.3 Reuse or build dissemination components</td>
<td>4.3 Run collection</td>
<td>5.3 Review and validate</td>
<td>6.3 Interpret and explain output</td>
<td>7.3 Manage release of dissemination products</td>
<td>8.3 Agree an action plan</td>
<td></td>
</tr>
<tr>
<td>1.4 Identify concepts</td>
<td>2.4 Design frame and sample</td>
<td>3.4 Configure workflows</td>
<td>4.4 Finalise collection</td>
<td>5.4 Edit and impute</td>
<td>6.4 Apply disclosure control</td>
<td>7.4 Promote dissemination products</td>
<td></td>
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<tr>
<td>1.5 Check data availability</td>
<td>2.5 Design processing and analysis</td>
<td>3.5 Test production systems</td>
<td></td>
<td>5.5 Derive new variables and units</td>
<td>6.5 Finalise outputs</td>
<td>7.5 Manage user support</td>
<td></td>
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</tr>
<tr>
<td>1.6 Prepare and submit business case</td>
<td>3.6 Test statistical business process</td>
<td></td>
<td></td>
<td>5.6 Calculate weights</td>
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<td></td>
<td>3.7 Finalise production systems</td>
<td></td>
<td></td>
<td>5.7 Calculate aggregates</td>
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<td></td>
<td>3.8 Finalise data files</td>
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<td>5.8</td>
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## Other Roles of an SBR

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<td>3.7 Finalise production systems</td>
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Other Roles of an SBR

**Design**
- 2.1 Design outputs
- 2.2 Design variable descriptions
- 2.3 Design collection
- 2.4 Design frame and sample
- 2.5 Design processing and analysis
- 2.6 Design production systems and workflow

**Build**
- 3.1 Reuse or build collection instruments
- 3.2 Reuse or build processing and analysis components
- 3.3 Reuse or build dissemination components
- 3.4 Configure workflows
- 3.5 Test production systems
- 3.6 Test statistical business process
- 3.7 Finalise production systems

**Collect**
- 4.1 Create frame and select sample
- 4.2 Set up collection
- 4.3 Run collection
- 4.4 Finalise collection
United Nations Guidelines on SBRs

• Publication in process: pre-edited version available on website


• Editing being finalized now

• Builds on ECE Guidelines, addressing the specific needs of countries with less-developed statistical system
UN Guidelines on SBRs

1. Introduction
2. Roles of the statistical business register
3. Coverage of the statistical business register
4. Units in the statistical business register
5. Characteristics of units
6. Data sources for the statistical business register
7. Maintenance of the statistical business register
8. Survey frame methodology
9. Dissemination
10. Quality
11. Key considerations in establishing a statistical business register
12. Topics for further work and research
UN Guidelines on SBRs

Questions/Exercise
UN Guidelines on SBRs

1. Which roles does your SBR currently perform?
   A. Live register
   B. Coordinating surveys
   C. Business demographics
   D. Integration with other domain-specific registers
   E. Direct source of data
   F. International data exchange
   G. Modernization of statistical production

2. Which of the above roles could your SBR possibly perform in the near future?

3. What would it take to achieve this?
UN Guidelines on SBRs

Thank you!
UN Guidelines on SBRs

1. Tell us your understanding of the key properties of an SBR. How can an SBR contribute to your work programmes of your office?

2. Does your office conduct business surveys? If not, does your office compile any data at all that are related to businesses (enterprise/establishment/legal units)?

3. Discuss the feasibility of using the following data sources to update the SBR in your country:
   - Economic census
   - Surveys
   - Administrative data and tax registers
   - Internet and big data

4. Is there any interest in your office to produce statistics on business demography?