Principles of measuring the Non-Observed Economy

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Conceptual background

- System of National Accounts 1993 (SNA 93 and 2008)
- UNECE surveys on country practices in measuring the NOE (1993, 2002, 2005/06)
General production boundary

GDP should cover exhaustively all production activities

- Enterprise using inputs to produce outputs of a kind that can be delivered or provided to other institutional units
- Outputs:
  - goods – physical objects whose ownership can be transferred
  - services – no ownership, can not be traded separately from production
  - knowledge capturing products

General production boundary (2)

Economic production – all activities “carried out under the control and responsibility of an institutional unit that uses inputs of labour, capital, and goods and services to produce outputs of goods or services.” (2008SNA 6.24)

⇒ any human controlled activity resulting in outputs that can be exchanged
  - Natural processes excluded
  - Outputs can be exchanged
SNA production boundary

- 2008 SNA production boundary includes:
  - production of goods or services (intended to be) supplied to units other than their producers;
  - own-account production of all goods for own consumption or gross capital formation;
  - own-account production of knowledge-capturing products for own final consumption or gross capital formation, excluding such products produced by households for their own use
  - housing services by owner-occupiers
  - services by paid domestic staff

SNA production boundary (2)

- Excludes household services for own use:
  - Cleaning, maintenance and repairs of dwellings and household goods
  - Preparation of meals
  - Care of children and sick and old
  - Transport of household members and goods

- Why excluded:
  - self-contained, limited influence on economy
  - no market prices
  - no link with economic policies (taxes, exchange rate etc.)
  - consequences for employment statistics
Definition of NOE

- All activities within the SNA production boundary should be included

⇒ Non-observed economy refers to all productive activities that may not be captured in the regular statistical enquiries, that is, activities that are *not directly observed*.
- The aim is to make national accounts exhaustive
- Statistics are impartial - from NA perspective not important whether what is produced are “goods” or “bads”, whether produced legally/illegally, by registered/unregistered enterprises etc.

Other terms used

- black, grey, shadow, informal, underground, hidden, parallel, secondary, alternate, clandestine, invisible, unofficial, etc.
- not clear what it covers
- negative connotation
- underground and informal may have different meanings outside National Accounts
NOE problem areas


5 problem areas:
1) Underground production
2) Illegal production
3) Informal sector production
4) Household production for own final use
5) Deficiencies in data collection

1. Underground production

- All legal production activities that are concealed from public authorities to avoid:
  - payment of income taxes, VAT or other taxes
  - payment of social security contributions
  - meeting certain legal standards e.g. minimum wages, maximum hours, health safety
  - complying with administrative procedures e.g. filling out stat. questionnaires or other forms

*Note:*
- ‘underground’ may have different meanings
- no clear border btw underground and illegal
2. Illegal production

- Production of goods and services whose production, sale or possession is forbidden by law
- Activities that are legal but made illegal when conducted by unauthorised persons

3. Informal sector production

- Units engaged in production for generating income and employment for the person concerned
- Low level of organisation, informal employment relations (oral agreements), little or no division between labour and capital, on small scale

Note:
- ‘informal sector’ - different meanings for different purposes
- Borderline between informal and underground not clear
4. Household production for own final use

- production of crops, rearing of livestock, production of other goods for own final use
- own account capital formation, incl. construction of houses
- imputed rents of owner occupied dwellings
- paid domestic services

=> criterion of significance – estimate only if considered quantitatively important in the total supply of a particular good

Owner-occupied housing (imputed rent)

- should be included in NA
  - because of comparability between countries and over time
- was included in the first Eurostat framework but not in the second
- should be clear whether included in NOE or not – significant size
- can not be based on direct observations since there are no market transactions
5. Deficiencies in data collection

- Undercoverage of enterprises in whole or in part
  - New enterprises, output below threshold levels, incorrect classification of activities
- Non response by enterprises
  - Do not fill out questionnaires
- Underreporting by enterprises
  - Data are incorrectly reported or correct data is inaccurately edited or weighted

Analytical frameworks

- to help identification and measurement
- to be mutually exclusive and exhaustive
- to compare approaches across countries and share experiences
- to help focus efforts on NOE causes that have the biggest effect on GDP
- can be based on characteristics of
  - enterprise carrying out the activity
  - activity
  - observation method
  - cause of measurement deficiency
ISTAT and Eurostat T1-T8 framework

- Statistical underground
  - Non-response to surveys – T1
  - Out of date registers – T2
  - Unregistered because of other reasons than deliberate non-registration – T3
- Economic underground
  - Underreporting of production – T4
  - Intentionally not registered – T5
- Informal sector – unregistered units – T6
- Illegal production – unregistered units – T7
- Other types of undercoverage – T8

Eurostat N1-N7 framework

- Introduced for the Pilot Projects on Exhaustiveness in 2002
- Starting point the characteristics of producers (registered or not, surveyed or not)
- Better to use in the production approach
- Used by Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Montenegro, Poland, Serbia
Eurostat N1-N7 framework

- Unit deliberately not registered - underground - N1
- Unit deliberately not registering - illegal - N2
- Producers are not required to register - N3
- Legal persons not surveyed - N4
- Registered entrepreneurs not surveyed - N5
- Producer deliberately misreporting - N6
- Other statistical deficiencies - N7

Production approach - methods

- Supply based methods
  - e.g. estimating crop production based on consumption of seeds, construction based on use of construction materials
- Labour input method and the Italian approach
  - based on estimates of the supply of labour from household survey or demographic sources, and estimates of output and VA per labour input form enterprise surveys
- Demand based methods
  - e.g. estimating household consumption of health and personal services, uses of products as raw materials, etc.
- Income based methods
  - based on data on income from administrative sources
- Commodity-flow method
- Industry-specific methods - agriculture, construction, trade, restaurants and hotels, transport, etc.
Expenditure approach: sources and methods

- Household Final Consumption Expenditure
  - household expenditure surveys (HES), retail and int. trade stat., production stat., admin. data, business reports, socio-demogr. data
  - methods: direct observation (HES), commodity flow, benchmark-to-indicator, consumption

- Government Final Consumption Expenditure

- Final Consumption Expenditure of NPISH

- Gross Fixed Capital Formation
  - surveys, commodity-flow, government data, construction output, etc.

- Changes in inventories
  - enterprise surveys, data on inventories of government agencies

- Acquisitions Less Disposals of Valuables
  - data from producers, imports, retailers, or purchasers

- Imports and Exports of Goods and Services
  - International trade, customs declarations, surveys of shuttle traders

Supply and use framework

- commodity flow method at the level of the whole economy
  - total output/sales by product (goods and services)
  - data on exports and imports (goods and services).
  - estimates of the ratios of IC to output.
  - total intermediate consumption by product,
  - final household consumption expenditure, gross fixed capital formation, and changes in inventories by product

- balancing – removing inconsistencies for the benchmark year and subsequent years
Macro-model methods

- Estimate NOE based on one single model
  - monetary methods – based on stocks or flows of money;
  - global indicator methods, e.g. electricity consumption
  - latent variable methods – two groups of variables: one for the size and the other for evidence of missing activities

Macro-model methods (2)

- unsuitable for NA because
  - activities not precisely defined
  - assumptions too simplistic
  - results not stable
  - different models give different results
  - only global estimate for GDP, not by industry
  - results can not be combined with other measurements

- not recommended to use for measuring NOE - declaration by ISWGNA (signed by UN, Eurostat, OECD, IMF, World Bank)
**Improvement of basic data**

- Statistical data requirements
  - make known the requirements and data problems of GDP compilation to the branch statisticians
  - inform main users about the NOE problem areas
- Institutional framework
  - legislation, relation between confidentiality and non-response or misreporting, access to administrative data, place of NOE measurement in the organisational structure, planning framework, quality programme
- Conceptual framework of data collection
  - units, classifications
- Data collection mechanisms
  - administrative sources, statistical business register, surveys

**Implementation strategy**

Steps:
- Formulate aims, consult internal and external users
- Select an analytical framework
- Assess NA and basic data collection programme
- Identify and prioritise NOE improvements

Special features in transition countries:
- priorities: underground, informal and food production
- analytical framework linked to priorities
- introducing sample surveys
- cooperation with other government agencies