This article is part of a set of background articles explaining in some detail how statistics producers, such as national or international statistical institutes, may build a coherent system of national accounts (SNA), especially in developing countries. The articles are based on the official Eurostat handbook Essential SNA - Building the basics and they focus particularly on the early stages of the implementation.

The non-observed economy exists in all countries and this article looks at the implications this can have on the SNA. In the first part of the article, non-observed activities are classified and described, and in the second, some of the methods used to overcome the gaps in national accounts information that this sector creates are presented.

The non-observed economy

The main purpose of national accounts is to offer an exhaustive description of an economy. This means that the main aim of compiling statistics is to cover as far as possible the productive activities belonging to the SNA. It is clear that an exhaustive coverage of national accounts is an important quality aspect.

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Figure 1: Delimiting the observed from non-observed economy in the 2008 SNA

Lack of coverage in national accounts leads to inconveniencing users and national accountants themselves:
• For users, improper coverage causes problems in understanding the economy both in terms of levels and trends. Levels of GDP and other data are downward biased, giving an inaccurate view of the economy, affecting international comparability. Biases in trend estimates can be expected if the economic activities missing from GDP change at different rates from those included.

• For national accountants, lack of coverage causes imbalances in the internal consistency of accounts because some economic transactions are not measured.

The possibility that some economic activities are omitted is addressed by the media, who often suggest, using simplistic assumptions, that the GDP figures published by national statistical offices are underestimates. To avoid this situation a national statistical office should elaborate a measurement program for improving the exhaustiveness of data, with clear objectives, roles and responsibilities for national accountants and for survey statisticians, including those in regional offices. This programme should be combined with other quality management and improvement initiatives. The major data users should also be informed of and involved in this program.

It is important to note that concerns about the non-observed economy do not lead to defining a separable way of measuring it. Concern should instead be aimed more at improving the overall quality of national accounts data.

Regular data sources – as described in Building the System of National Accounts - statistical sources and Building the System of National Accounts - administrative sources – may be affected by what are called deficiencies in the basic data collection programme (statistical underground), due to:

• **under-coverage of enterprises**: enterprises, or parts of them, are excluded from the data collection program, though in principle they should have been included, due to several possible reasons:
  - an enterprise is new and has not yet been included in the survey frameworks;
  - an enterprise falls below the size cut-off for surveys;
  - an enterprise has been incorrectly classified by type of activity or by region and thus improperly excluded from the survey frame;
  - an enterprise has not been entered in the statistical register, regardless of its desire to be, because of the lack of efficiency of the statistical system, or due to the fact that registers are not updated, for instance.

• **non-response** by enterprises, depending on the sensitivity of the statistical system: enterprises are included in the sample but no data are collected from them and no imputation is made for the missing observations, because:
  - the survey questionnaire was wrongly addressed;
  - the enterprise, or part of it, did not return the questionnaire.

• **under-reporting by enterprises**: data is obtained from enterprises, but is misreported by the respondent, or correct data is received but is inappropriately input or weighted.

The situations above show quite clearly the need for improvements to basic data collection programmes with reference to the NOE: NOE measurements should be optimised by ensuring that basic data includes productive activities to the fullest extent possible.

In general, data sources are not enough to fully cover the productive process in the economy. This ‘non-observed’ part of the economy refers to the following activities:

• **Underground activities**, defined as those activities that are productive and legal but are deliberately concealed from public authorities to avoid:
  - payment of income, value added or other taxes;
  - payment of social security contributions;

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– having to meet certain legal standards such as minimum wages, maximum hours, safety or health standards, etc.;
– complying with certain administrative procedures, such as completing statistical questionnaires or other administrative forms.

• **Illegal activities**, defined as those productive activities specifically covered by SNA production boundary that:
  – generate goods and services forbidden by law (e.g. production and distribution of illegal drugs);
  – are unlawful when carried out by unauthorised producers (e.g. unlicensed practice of medicine).

• **Production of households for own final use**, defined as those productive activities that result in goods or services consumed or capitalised by the households that produced them, such as:
  – production of crops and livestock;
  – production of other goods for their own end use;
  – construction of own houses and other own-account fixed capital formation;
  – imputed rents of owner-occupiers, and services of paid domestic servants.

• **Non-observed informal activities**, being part of the informal sector also covering observed activities undertaken informally; in general, informal activities are those productive activities conducted by unincorporated enterprises in the household sector that are unregistered and/or are less than a specified size in terms of employment, and that have some market production.

These categories of non-observed activities were established to reflect a convergence of opinion amongst statisticians and national accounts experts. They attempt to cover all 'problem areas' encountered in achieving the most exhaustive estimates of national accounts. Various other terms are used to reflect these non-covered areas, such as the 'shadow' economy, the 'cash' economy, the 'parallel' economy, the 'underground' economy, etc. In all cases, said 'problem areas' must be reciprocally exclusive.

The extent, impact and structure of the non-observed part of the economy vary considerably from country to country, depending on many aspects:

• structure and development of economy;
• legislation;
• organisation of the national statistical system;
• political interest, etc.

In order to facilitate comparison across countries and to improve exhaustiveness of national accounts, Eurostat has carried out two rounds of **Pilot Projects on Exhaustiveness (PPE)** to address the differences in concepts, definitions, and methods and to identify the types of non-exhaustiveness. The tabular approach undertaken relates NOE areas with statistical problems encountered by national accountants (see Figure 2).
The main goal of the framework is to ensure that the NOE is measured systematically, potential areas are covered and no activities are double counted. Country comparison of the NOE, similarity in methods used and exchange of experience in implementation can be more easily ensured if the same frame is employed.

**Measurement methods**

for the non-observed economy vary across countries.

Several sources are quite common, such as agricultural censuses, business statistics, household surveys, demographic data/population censuses, Labour force survey/labour statistics, taxation and fiscal data, police records, social security records and foreign trade statistics. Some sources are used only in one or a few countries, particularly the surveys for capturing a specific activity (e.g., tobacco smuggling). Other sources such as labour force surveys and employment data, structural business surveys, household budget/expenditure surveys, and taxation data are widely used by countries.

The main methods used in estimating the NOE can be classified into two types:

1. Statistical methods, such as direct estimations based on direct surveys (surveys on expenditure, income, labour, time use or opinion, for instance) or indirect estimation based on available data sources.

**Indirect statistical compilation methods** can be classified by type into:

- **Supply-based approach** (including the labour input approach): it relies on data on the supply of inputs (number of primary raw materials, just one major raw material, labour, land, fixed capital stock, etc.) that are used for producing goods and services. Input/output and input/value added ratios are needed to calculate output and value added estimates from the input data.

- **Demand-based approach**: it aims to assess production by using indicator data on specific uses of goods and services that sufficiently describe their production: household final consumption expenditures of a certain commodity such as health and personal services; uses of raw materials such as the processing of...
agricultural products; major export commodities; administrative data indicating demand for a product, such as motor vehicle registrations and building permits, etc.

- income-based approach: it is based on available data from administrative sources in some categories of income, which can be used to obtain an indication of production covered by the administrative system (income taxes, social security contributions paid by self-employed persons or private entrepreneurs, etc.).

- commodity flow approach: it involves balancing total supplies and uses of individual products, using accounting equations. One specific application of a commodity flow method is to calculate the output of the retail trade from supply of commodities.

2. Methods based on modelling techniques. Macro-economic models (such as monetary models, global indicator method) provide some estimation of the NOE but should be avoided. The use of available basic data is preferred. Where model based assumptions are unavoidable, they should be applied at the most detailed available level because it has been shown that the results are sensitive to data transformations, units of measurement and the sample used.

It should be noted that there is no unique standard method applied internationally; several methods or combinations of methods are usually applied, depending on the characteristics of each country.

The process of incorporating non-observed production into GDP estimates implies complex procedures, such as:

- Some procedures yield estimates of total production for a specific activity without separately identifying various types of non-observed activities;

- Ad hoc supplementary data are often required to make efficient use of existing sources (value added estimates can be derived from output estimates obtained from a commodity flow method using a value added/output ratio calculated from an ad hoc study);

- Compilation should be based on detailed and specific adjustments using specific sources and known linkages and relationships;

- Where possible, alternative estimates should be derived, compared, and assessed for plausibility of results. Data relating to similar topics but from different sources should be compared and analysed to identify errors or remaining gaps;

- Assumptions underlying estimation procedures should be made explicit in calculations and reviewed regularly for their plausibility.

Other articles

- Building the System of National Accounts (online publication, overview of all articles)

Dedicated section

- International statistical cooperation

Publications

- Essential SNA - Building the basics

External links
