PRINCIPLES AND PRACTICES IN THE MEASUREMENT OF THE UNRECORDED ECONOMY: DISCUSSANT'S REMARKS

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1. INTRODUCTORY REMARKS

A lot of attention is being paid these days to the "hidden economy". Reports often suggest that the figures published by national statistical offices miss large parts of the economy. They challenge the credibility of national accounts' estimates. For example, Schneider and Enste (2000) estimate an average level of the hidden economy in Canada over the period 1990-93 at 13.5% whereas a Statistics Canada report (1994) concluded that the upper bound to what could have been missed in the 1992 official gross domestic product figures was 2.7%.

However, the research papers on the hidden economy are often subject to one or both of two major weaknesses. First, they often fail to define exactly what is to be measured and thus possibly missed. This lack of precision regarding the measurement target is epitomized by the wide range of different terms in common use - hidden economy, shadow economy, parallel economy, subterranean economy, informal economy, cash economy, black market - to mention just a few. There is no common understanding whether they all mean the same thing, and if not, what relationships they have to one another. The second problem is the dependence of most estimation methods upon high level model assumptions that cannot be justified. For example, the model upon which Schneider and many others base their estimates is one that assumes that changes in the patterns of currency demand can be attributed entirely to, and reflect accurately, changes in the hidden economy. Another model used by Lackó (see Schneider, 2000) assumes the hidden economy can be measured through changes in household consumption of electricity. Such methods make inadequate use of the wealth of pertinent economic data available and there is no obvious way in which their findings can be combined with others jointly to provide more reliable measures.

By contrast, the three papers presented in this session all start from a solid definition of what is to be measured, namely economic production as defined in the 1993 System of National Accounts (SNA93). They identify the elements that are difficult to measure as "illegal", "underground" and "informal" productive activities, all of which terms are well defined in the SNA93, and which are collectively referred to in this session as "unrecorded" or equivalently "non-observed". And they embody use of data from a wide variety of sources that can be brought together and reconciled within the SNA93 framework.

2. PAPER BY RONALD LUTTIKHUIZEN AND BRUGT KAZEMIER

Based on their experiences at Statistics Netherlands, Ronald Luttikhuizen and Brugt Kazemier present a perspective on how hidden (meaning underground in SNA terms) and informal activities can best be systematically incorporated in the national accounts. They indicate their preference for a "commodity flow" (production) approach to national accounts compilation, especially for countries in transition. They briefly describe the approach in terms of the systematic collection, editing and integration of data from surveys within, and then across, industrial branches. They recommend use of social accounting matrices as possible means of displaying additional dimensions of, and integrating, data pertinent to the non-observed economy (NOE).

More specifically, the authors suggest the use of a two dimensional table to characterize non-observed activities. One axis classifies the producing units as incorporated enterprises or household enterprises, and further divides the first group into those enterprises that appear in the national business register and those that do not. The second axis classifies the labour input as being "administered" (i.e., known to the appropriate administrative authorities), or "not administered". In combination the two axes define five cells (called quadrants in the paper). Within each cell, the authors identify the likely NOE activities and describe the methods available to measure them. They also note that the table can be extended to include a cell for non-market production by household enterprises.

The authors further suggest that, in compiling the accounts by the commodity flow approach, a three dimensional table be produced with industries in one axis and the variables of interest on the second axis. The third axis

comprises seven layers, containing the initial values of each variable, the adjustments for NOE activities for each of the five cells in the NOE table, and the final values of the variables after all the adjustments have been applied. Such an approach is recommended as a means not only of documenting adjustments but also of identifying the major sources of weakness in economic measurements and deciding on priorities for the survey program.

The paper provides valuable insight into the sort of ways in which the NOE may be characterised and measured. Its practical application would raise three questions. First, is the five cell breakdown optimal from the perspective of understanding and measuring the NOE? Second, is the documentation procedure too data intensive to be affordable? Third, is there an existing example of a social accounting matrix specifically designed for the NOE?

3. PAPER BY MANLIO CALZARONI

The paper by Manlio Calzoroni characterizes the NOE in terms of eight components and it describes the well tried and tested process actually used by the Italian National Statistical Institute (Istat) to ensure exhaustiveness of estimates of the Italian gross domestic product (GDP), including NOE activities. The activities comprising the NOE are classified into the eight groups:
- (1) illegal activities;
- informal sector activities by units that (2) are not required to register; or (3) are registered but underreport;
- formal sector activities by units that (4) do not register, or (5) register but underreport; and
- formal sector activities by units that register and are willing to report but that (6) are not registered or (7) are mis-registered or (8) for which survey responses are not obtained.

Activities in groups (6), (7) and (8) are collectively referred to as the "statistical underground", meaning that the failure to measure them is due to problems in the core statistical processes rather than deliberate concealment or because the units belong to the informal sector and hence are out of scope for most enterprise surveys.

At the heart of Istat's procedures is the labour input approach used in the compilation of production account. About 70% of the total GDP estimate is computed this way. The essence of this approach is that:
- the important economic variables such as output and valued added are obtained from surveys of establishments in the form of *ratios per unit of labour*, within industry by and size group strata;
- "demand side" employment data are obtained from surveys of establishments;
- "supply side" employment data are obtained from a labour force survey of households;
- the two sets of employment data are transformed to a common, national accounts based framework in terms of full time equivalent employment, and are confronted and reconciled to produce estimates of labour input by industry and size group;
- ratios per labour unit are multiplied by the labour inputs to compute estimates of the economic variables.

Whilst this approach is not specifically designed to measure NOE, by its very nature, it includes (a large part of) the NOE. It is sometimes called the Italian approach because it was first described in detail by Istat, and has been used by Istat since 1987. However, the underlying notion of adjusting or replacing employment measured by establishment surveys by employment from a household survey is used by statistical agencies in other countries too, for example by the national accounts area in the Australian Bureau of Statistics.

A (statistical) business register is a key part of the establishment survey infrastructure and the paper outlines the methods used to combine information from administrative and statistical sources to ensure that this register is comprehensive, well coded and up to date. It describes the reconciliation of data from the population census and the labour force survey, in particular identification of persons employed according to the SNA93 definition but reporting themselves as unemployed. Finally, it indicates how output per capita values for self employed workers are adjusted upwards when they are observed to be less than those for employees in the same industry.

The paper provides a fine, practical example of NOE characterization and measurement. It raises two questions. First, how probable is it that people report all their employment activities, including those that they are not declaring to an administrative source, to a household census or survey? Second, why is no adjustment made for under-reporting of production or over-reporting of costs by enterprises in the formal sector? For example, the Australian Bureau of Statistics makes an upwards adjustments in the order of 5% and 15% to profits data reported by incorporated and unincorporated enterprises, respectively, to tax authorities.

4. PAPER BY IRINA MASAKOVA

The paper by Irina Masakova is a description of the procedures actually used by the Russian State Committee for Statistics to estimate and include the NOE component (22-25%) within GDP. A three stage approach is outlined, comprising adjustments (1) to the outputs within individual industries, (2) during compilation and balancing of the national accounts, and (3) during balancing of the input-output tables.

Within two of the areas where the NOE is particularly large, namely agriculture and retail trade, three types of adjustments to individual industry outputs are described.

- Supplementary surveys are used to measure informal production not covered by regular enterprise surveys. The examples given are: a four stage sample survey based on a land taxpayers' register, for measuring the: agricultural production of rural family plots; a single stage sample survey based on a peasants' register for measuring the agricultural production at private farms; and quarterly surveys of city markets in which data about the numbers of stall holders are obtained from market authorities, and the sales are obtained by direct question and by observation.
- Reference indicators are used to compensate for understated outputs as exemplified in the adjustments of milk production and cereal production using forage and seed consumption, respectively. Estimates of retail sales that are hidden or missed are obtained by comparing total reported sales with receipts of trade revenues by banks, and with household expenditures.
- Supply-use tables for individual commodities are prepared and balanced, examples given being for agricultural products (in physical quantities), and high demand consumer goods.

The sort of adjustments made while compiling and balancing the national accounts are illustrated through the comparison of household incomes (which are underreported) with household expenditures, allowing for changes in assets. The strengths and weaknesses of the data are discussed. Finally the results of ongoing experimentation with the labour input approach are outlined.

The paper indicates the painstaking way in which Russian GDP estimates are adjusted to include informal and hidden activities. Given this very thorough approach and the focus on detail, is there any scope at all for really substantial omissions from the estimates due to something missing at the big picture level?

5. CONCLUDING REMARKS

What is striking about these three papers, taken as a group, are their similarities. As previously noted, they all take the SNA93 as the reference point. They describe NOE measurement within the context of national accounts' compilation by production approach. They involve systematic dissection, analysis, and measurement of the NOE, integrating all the data available, and modelling only as a last resort at low levels when data are not available. None of the papers deal explicitly with illegal activities.

Whilst, the confluence of ideas is not entirely surprising - the authors all have a national accountant's optic and they have been exchanging ideas for a decade - it suggests there is scope for a comprehensive description that embodies all these ideas and promotes an integrated approach based on international standards. This is the basis for the ongoing development of a Handbook for Measurement of the Non-observed Economy (provisional title) as a supplement to SNA93. The Handbook Project is being organized by the OECD with team members from international organizations and national statistical offices. Indeed, all the authors in this session are contributors.

The need for the Handbook initially arose in the particular context of countries in transition, where the contribution of the NOE is high. However, the Handbook itself is intended to be universally applicable, although one chapter will be devoted to dealing with problems in specific situations, e.g., in a transition economy. A preliminary draft of the Handbook is being prepared for discussion and review at a Workshop on NOE Measurement in the Russian Federation, October 16-20, 2000. The next version incorporating feedback from Workshop will be distributed January 2001. Further details of both the Handbook and workshop are available from the discussant.

REFERENCES
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