THE PAST AND FUTURE OF THE STATISTICAL SURVEYS OF MANUFACTURING IN HUNGARY

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I. INTRODUCTION

The transition from a centrally planned economic system to a market economy necessitates an equally drastic change in the way the statistical system operates.

Obviously, the task now facing Hungarian statisticians is to construct a system that unifies the best ideas from the West with that part of the former (national) practice which also satisfies the new requirements.

In order to make the choice of the latter part possible, the paper critically reviews the various statistical data collection practices carried out in the Hungarian industry during the decades of centrally planned economy. Some surveys had had to meet the specific needs of policy makers of that epoch and are now superfluous. Others supplied information which was also to be important in the coming years, but which could not be retained due to the new economic conditions. And finally, there was information which is independent from the socio-economic system, and should be collected under any conditions.

The content of **section III.** could be noteworthy in two respects: (i) the significance of the cuts effected can be judged only with the knowledge of facts as perceived by Hungarian data suppliers; (ii) one or another of these surveys could offer some valuable experience from the point of view of methodology or analysis.

Focusing on the specific features of the Hungarian organizational structure, **section II.** points out the advantages of full-scale surveys in the distorted structural conditions of Hungarian industry.

Some features of the new, radically reduced data collection system are summarized in **section IV.**, while **section V.** expounds a few conclusions and suggestions based on the comparison of the former and the present survey system.

II. SOME CHARACTERISTICS OF THE DISTORTED ORGANIZATIONAL STRUCTURE OF HUNGARIAN INDUSTRY IN THE CENTRALLY PLANNED PERIOD

Within the framework of the centralized system of economic management, the **industrial sector**, which in this case is made up of **mining and quarrying, manufacturing and electricity, gas and water supply**, consisted of a relatively small number of state-owned enterprises and (state-controlled) industrial co-operatives. The number of enterprises was continuously diminished after they were brought under state control, partly for economic reasons, but also in order to facilitate central planning, management and accounting.

As a result, in Hungarian organizational structure, **a few large enterprises** with rather homogeneous activity and large employment, **have become predominant** in every branch of the economy, taking over the function of a great number of small and medium-size enterprises characteristic of market economies. With a certain time-lag, the process has been similar in the co-operative sector as well.

Industrial activity carried out by **individual private entrepreneurs** was governed by a licence from the State authority and the number of employees in any privately owned enterprise was restricted to a few persons. Thus the number of authority licences given to small industrial entrepreneurs was a good starting-point for estimating the performance of the handicrafts sector (without regular statistical surveys).

Therefore, the full-scale observation of a small number (scarcely one thousand and a few hundreds) of state-owned enterprises and co-operatives covered about 95-97 per cent of total industrial activity; and this system did not impose an exaggerated burden on the companies in respect of statistical data collection.

Nevertheless the gist of the problem,

namely the **over-centralization of the economy**, had to be taken into consideration by statisticians when constructing an appropriate system for comprehensive industrial statistics.

III. THE MAIN FEATURES OF THE INDUSTRIAL STATISTICAL REPORTING SYSTEM IN THE CENTRALLY PLANNED PERIOD

In Hungarian practice, industrial statistics result from the collection of data directly from respondents (i.e. industrial enterprises, co-operatives) by means of questionnaires.

The former industrial statistical data collection system can be divided into three categories:

1. Statistics on a monthly and/or quarterly basis
2. Statistics on an annual basis
3. Periodical or ad hoc surveys for specific economic information.

The main characteristics of these inquiries (only indicating some of the most significant topics) were as follows:

1. **Monthly and/or quarterly surveys** consisted of:

a/ Data for production, i.e. value of sales; changes in stocks; industrial services rendered; quantity of output and sales, as well as value of sales for selected (about 1600) industrial products;

b/ Statistics on shipments and new orders, (detailed by destination i.e. exports; domestic trade; investment; industrial consumption)

c/ Number of employees; wages and salaries by main occupational groups; hours performed by manual workers;

d/ Special technical indicators in selected industrial sectors;

e/ Producer prices for selected individual products, based on sample surveys, for the compilation of producer price indices.

2. **The annual censuses** included (a) standard questions for all industries and (b) specific ones that varied from industry to industry.

In the first part, the enterprises in greater detail reported on the subjects covered by monthly surveys (e.g. the value of turnover was broken down to products and selected types of services). Furthermore, the annual industrial censuses collected detailed data on the consumption of raw materials, fuels and intermediate products purchased; electric energy produced, purchased and consumed; stocks and changes of fixed assets; etc. Industry specific questions varied according to the characteristics of the individual industries.

The majority of statistical programs remained the same from period to period, except for minor modifications to the questionnaires, although, a few surveys might be discontinued and new ones started.

The annual survey on fuels and raw materials consumed made it possible to show in detail a number of input ratios and import intensity in the various fields of industry and furthermore to analyse the relationship between import intensity and the development of production and exports, invested capital, etc.

In addition providing also the Statistical Office with detailed data, quarterly and yearly financial reports (submitted first of all to the tax authorities and ministries of state-owned enterprises and industrial co-operatives) supplied detailed information on output, input, capital formation etc. which were used for the purpose of national accounting by the HCSO.

A suitable example referring to the exaggerated, politically stimulated demands was that in 1952-1956 industrial enterprises had to supply quarterly data on the unit-costs of selected industrial products, and annual data on the changes of cost levels, taking into account all the so called "comparable" products (produced both in the base and current year).

3. **Special surveys** related to a wide range of topics, for example the utilization of technical capacity; mechanization of various producing and internal transport processes; and, on the basis of sample surveys, composition of employees by sex, age, education, professional training, working conditions, earnings, etc.

In addition to full-scale inquiries, in the framework of industrial statistics, representative economic statistical surveys were also conducted in the past decades in those fields (i.e. producer prices, manpower) where the economic content of the phenomena examined and the size of the population made it possible to fulfil the requirements of sampling. One of the most important and widely used observation was the sample survey on labour carried out quinquennially (for twenty years).

The first **industrial sample survey on labour**, carried out in 1959, collected information on (about 50,000) workers from state-owned industrial enterprises. In subsequent surveys the scope of inquiries was greatly extended. For example, in 1964, not only workers but also technical and administrative employees and, in 1969, also auxiliary employees were included. The 1974 survey of industry was part of a labour sample survey covering the whole economy, which for the first time included data on industrial co-operatives.

(The total industrial sample consisted of 98,000 manual workers and 53,000 "white collar" workers.) The employees surveyed were selected by the respondent enterprises according to a centrally prescribed algorithm elaborated separately for various industry groups. Information on individuals was supplied by the respondent enterprises. For the most part administrative records were used. Interviewing was necessary only in connection with a few questions.

Basic issues of sample surveys on industrial employment were: qualification of workers, professional experience characterised by service years, working conditions, frequency of changing the job, hours worked, wage, earnings (total and rates of some important components). Collection of data on basic individual characteristics (age, sex), on sphere of activity etc. made possible various cross-tabulations to show the complexity of connections.

Special surveys related to the most important characteristics, results and relationships of the **technical development** and structural changes in Hungarian industry were carried out in the 1980s. For example, special tables of the annual surveys referred to the directly implementable results of research and development, namely number of inventions, patents, innovations and applied licenses. This survey made it possible to examine the impact of technical development and commodity innovation, in connection with enterprise management, in the different fields of manufacturing.

For studying relations between industrial production and invested modern equipment and machinery, a special survey dealt with new investments from the point of view of **utilization of electronics**. The basic questions were: value of capital stock of electronic and electronized machines, equipment and complete systems as well and the share of electronic machines used by branches of Hungarian industry.

Using among other sources the results of the aforementioned surveys, two bilateral, **international comparisons of industrial production and productivity** were carried out for 1965 and 1975, respectively, by Hungarian and Austrian experts. In the course of this investigation, special stress was laid on the technological and human factors fundamentally influencing the level of productivity. It was found that differences in the degree of mechanization and in the volume of investment were predominant. A considerable part of the differences in the industrial productivity level could be explained by a rather different product structure of the individual branches and sub-branches, especially in the engineering industry. But the conclusions which could be drawn from the bilateral comparisons show that the relative backwardness of productivity in Hungarian industry became an overall obstacle for economic growth.

A special survey was performed in order to examine the extent of **full-day absence** of workers in industry (and in a few other main sectors) as well as the causes of absences. It could be shown that rather a great number of working day losses, and corresponding production losses, were caused by unjustified absence and the trend of changes was unfavourable.

IV. THE MOST IMPORTANT ALTERATIONS MADE IN THE EARLY PHASE OF THE TRANSITION PERIOD

The comprehensive system of industrial statistics mentioned above have been disrupted by the recent economic and political changes; the impact was different on the individual programs.

One consequence of the liberalization of the economic system has been the enormous increase in the number of small enterprises and privat entrepreneurs. This new population of industrial data suppliers is neither able nor willing to satisfy all the demands of the old statistical system. This means that coverage and content of both the production and financial information available has diminished drastically, rendering the old statistical system all but inoperative. Thus the need to reorganize the entire industrial statistical system has become pressing.

In the former Hungarian statistical practice, the unit of observation and the data supplier was the enterprise (or co-operative, limited liability company, joint venture etc.) i.e. an organization with legal entity.

Since 1993, statistical surveys have covered all industrial organizations (with or without legal entity), and industrial private entrepreneurs with more than 20 employees.

Data for the non-surveyed part of the small businesses will be taken annually from the tax reports, while quarterly they will be estimated. But bearing in mind that the aforementioned tax reports are not quite reliable, this system cannot be implemented without special considerations. It has to be taken into account that small firms and sole proprietors often try to conceal a part of their turnover (and income) from Tax office. Generally, the close link of statistics with business accounting system is an important requirement. But in this particular field it seems more advisable to correct the data of tax reports by the help of assessments based on expert opinion, for the sake of statistical

accuracy.

1. Monthly Industrial Statistics for 1993

The aim of monthly industrial statistics is to follow up the performance of industry, using only a small number of selected indicators soon after the reference month.

The scope of the units included in monthly statistics is:

- industrial enterprises with more than 50 employees by full-scale survey;
- industrial enterprises with 21-50 employees by sample surveys.

The most important industrial statistical indicators observed are:

- value of industrial output by destination: export, domestic and total sale (in current prices),
- production of the most important (approximately 1600-1800) industrial products,
- stock of orders and new orders by destination (export, domestic and total).
- producer prices for selected individual products

based on a sample survey.

Data on employment are collected by separate questionnaires, outside the framework of industrial statistics. Although this approach causes minor difficulties in the compilation of productivity indices, labour force surveys produce the most important statistical indicators on short- and medium-term labour market developments (employment, unemployment, compensation, employment cost etc.) Thus data of labour statistics can be used in a combined fashion with other economic indicators to make assessments on the performance of the manufacturing industries.

2. Annual Industrial Statistics for 1992 and 1993

The annual industrial statistical data collection is a full-scope survey for all industrial enterprises with more than 20 employees.

Presently, the new annual questionnaire includes only two basic tables:

- Production and sale of industrial products and services;
- Some significant data of local units.

In the first table information is required on production (in quantity), on total sale (in natural units and in value), export and domestic sale of industrial products. The product nomenclature consists of about 6000-7000 items. Also the value of the most important industrial services is surveyed: subcontract work, repair and maintenance performed on a fee or contract basis, technological assembling etc. (37 items altogether).

The second table, supplied only by industrial enterprises with more than 50 employees, shows a few data relating to the employment and fixed assets of local units, i.e. number, wages and working hours of manual workers; number, wages and salaries of total employees; gross value of machinery and that of total fixed assets at the end of the reference year.

For the purpose of input-output tables, data collection referring to raw material consumption is also envisaged once every five years.

Every other topic of the annual industrial survey and all special surveys in manufacturing, have been abandoned.

As mentioned before, in a few cases the basically important observations cannot be maintained under the new economic conditions. For example: previously, for providing information for input-output tables in the context of annual censuses, turnover was broken down by destination (according to the activity class or branch of the purchaser). Presently, taking into account the very large number of economic agents, such types of data cannot be observed (at least on a full-scale basis).

The scarcity of the present annual data in Hungary has been underlined by the fact that, as far as I know, in every industrialized country, the system of industry statistics consists of a series of annual surveys in which questions about outputs and inputs are collected in conjunction with questions about employment and fixed assets. This accords with the U.N. recommendations for annual and subannual industrial surveys (IRIS: published by the U.N. Statistical Office in 1968) and those of the decennial World Programmes of Industrial Statistics.

V. SOME CONCLUSIONS AND SUGGESTIONS

In my opinion, when setting up priorities for statistical development the following -partly new- circumstances or considerations have to be borne in mind:

/1/ The speed of economic transformation and the progress of privatization in manufacturing has not been as quick, as was assumed 2-3 years ago. The expansion in the number of private enterprises is an encouraging sign, but so far these are mainly very small enterprises which, at present, are unlikely to account for more than a small portion of total output.

The predominant role still played by the large industrial enterprises can be seen from the following examples:

At the end of 1990 more than 1 million persons (about 81 per cent of the whole industrial

labour force) were employed by 933 enterprises and companies with more than 300 employees. Basically this situation has not changed yet: at the end of 1992, statistical units with more than 50 employees (and classified in industry) represented equally 86 per cent of the total industrial output and labour force, although their share in the total number of industrial units was 20 per cent only.

/2/ In a great many Western countries, the various business associations or chambers of commerce have been to a greater or smaller extent involved in the collection and dissemination of statistical data. Presently, in Hungary these institutions play a restricted role; the official **statistical work is still strictly centralized.**

Thus, if the HCSO gives up collecting industrial data on one or another important field, this fact results in a dangerous lack of information both at micro- and macroeconomic levels. On the other hand, if a special institution (for example a research institute dealing with economic problems) undertook a supplemental survey on its own, the total costs of data collection would very probably be much higher than in the framework of the official statistical survey system.

/3/ In the period of advanced computer technology, according to my experience, **enterprises**, especially the large industrial ones, **prefer stable statistical questionnaires**, possible harmonized with their own record keeping practice. It is very likely that periodical reductions result in getting data of poor quality on the one hand. On the other hand, it may cause an unsatisfied attitude on the part of enterprises, reacting unfavourably to the actual, momentary increasing of statistical demands and the need of repeated temporary modifications of software and data processing.

As far as the basic directions of statistical development are concerned, Western experts unanimously advise that in transition countries "it is vital to review and ruthlessly reduce the data items collected". Comparing the roughly outlined contents of the former and the present data collection program (see parts III. and IV., respectively), there is no doubt that, as far as Hungarian manufacturing is concerned, this advice has been very thoroughly followed. To tell the truth, the HCSO was forced to take such measures due to the significant reduction of its budgetary resources. Thus rapid and drastic changes in the allocation of the limited financial resources were needed.

Nevertheless, the same purpose: economizing on costs of data collection could be achieved by using different methods. It should be borne in mind that the **continuity of statistical output** must not be sacrificed for the sake of short-lived priorities or due to actual financial difficulties.

Of course, the great political and economic transition modifies the tasks and role of micro statistics. But we have to come to the conclusion that microlevel industrial statistics will also be needed in the future in order to monitor the development of this important branch of the economy.

The reduced content of the annual industrial survey adjusted this data collection basically to, what could be provided by small- and medium-size units.The point in question is whether the actually applied, highly simplified annual questionnaire can be considered as a real basis for providing correct and sufficient information on the performance, achievements and problems of manufacturing as a whole/.

In my opinion the development of the new statistical survey system has to be based on the thorough analyses of user's needs, allowing to the main users such as government and other national authorities, business professional organizations, research institutes etc. to express their needs on statistics.

The annual industrial survey has to cover all the fundamental needs for the study of the structure and activity of the manufacturing and those of its industries. At the same time, annual survey has to serve as basis to other specialized surveys with the aim to collect the information which is needed by the government and the socio-economic agents, in order to conceive, monitor and evaluate the government policies. There is a growing demand for data relating the business activities to the environment, too. And last but not least, studying the general statistical practice of market economy can support effectively to set up a new statistical system based on scientific concepts and methods, compatible with the international statistical standards.

Naturally, a cost effectiveness analysis has to be carried out before implementing a more detailed annual survey system in order to minimize the cost and burden to the firms. Thus in the light of the facts and conclusions mentioned in points /1/-/3/, there is an urgent need to investigate: how the burden imposed by different statistical surveys is really distributed among the various groups of reporting units and furthermore processing of the questionnaires collected from them.

In my opinion the possibilities offered by the relatively big share of large industrial enterprises in Hungary are not sufficiently exploited. The basic aim of the general reduction of

the industrial data collection was first of all to concentrate the capacity for the sake of the observation of numerous small, new enterprises.

I suggest that demands for information should be satisfied more effectively **by tailoring reporting requirements to furnish information according to the different abilities of respondents.**

In the present case of Hungary this general idea means first of all that industrial enterprises with more than 3OO employees could supply a more comprehensive annual questionnaire. Beyond the presently surveyed phenomena, it would include the main issues of employment focusing on professional aspects (distribution by shifts, professional training etc.); consumption and stocks of the most significant raw materials; energy consumption; machines and equipment used for the main technological processes (in quantity or at replacement costs); and last but not least data related to value added.

According to my former experience, this stratum of enterprises would not regard such type of annual report as a burdensome, additional task. It would be for them not much more than a **systematic by-product of effective business management.**

From the point of view of the HCSO, the processing of less than 1000 questionnaires might not appear as a significant burden, taking into account that the large enterprises usually make fewer mistakes than the small ones. Besides developing and applying appropriate computerized control processes, manual work could be greatly minimized.

Naturally, for the sake of comprehensive monitoring the development and up-to-date achievements of manufacturing, **sampling surveys** have to be used regularly as a general method of data collection for small businesses. This task has to be accomplished similarly in the case of quarterly and annual surveys. For this purpose there is an urgent need (i) to develop well defined and properly stratified frames of firms as basis for survey methodologies; (ii) to establish standards for the quality of industry statistics and develop procedures for measuring the degree to which those standards are met. Short of such an effort, attempts to improve the quality of small business statistics will very probable fail.

Needless to say that as a most important precondition of the aforementioned aim, a **modern business register** (a complete and continuously up-dated list of businesses classified by their main economic activity) has to be developed and operated also regarding to manufacturing.

Modifying the concept of the statistical unit, and adapting an **establishment-type data collecting system** (naturally in a parallel way) belong to the envisaged tasks of industrial statistics also in Hungary. But I can fully agree with the Canadian expert's opinion (M. Colledge: Economic statistics program. Review, comments and suggestions, 1991) that "a time of rapid change, with a shortage of resources, is not the time to introduce a more complicated set of statistical units, whatever the potential improvements in data collection might be." But taking into account that establishment-type units are of great importance mostly to large enterprises, for the time being we might to fall back upon subdividing similar data in the framework of their (partly suggested above) annual survey.

Working on this paper I had two objectives:

(i) to throw light on a number of the actual problems transition countries have to face and on some special circumstances in which these problems are rooted;

(ii) to confront my ideas with the scrutiny of the international expertise.

I hope that the paper has added further information to the common stock of knowledge relating to business surveys, on the problems with which the statistical systems of transitional countries are faced.

SMALL PRIVATE BUSINESS STATISTICS IN CZECH REPUBLIC

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Establishment Surveys within the Previous System of Centrally Planned Economy

The traditional goal of establishment surveys in the country was the control of the state plan and its fulfillment. It is necessary to underline, however, that the nature of the state plan changed over time. Initially, the state plan was obligatory with firms bound to the tasks of the plan. Later, the state plan only established orientating indicators for firms. This primary controlling role of establishment surveys gradually weakened during the last years. Nevertheless, the variables collected through the surveys were still mostly oriented to the plan indicators, with particular attention paid to physical before complex value indicators.

The establishment surveys had their special character - they were not only the means of statistical data processing, but they became important official documents of state, communal and cooperative units (which were practically the only forms of ownership) certifying fulfillment of the plan and their economic results. In this context it is necessary to mention that, unlike in market economy countries, the statistical and reporting units were usually not establishments but rather enterprises (legal units, registered in the business register of firms). This particular character of the surveys, together with the fact that the reporting units were usually highly centralized into relatively large enterprises, resulted in a particular form of data collection. There were no serious reasons for implementation of sample surveys - it was in each units' own interest to produce statistical returns at least for control purposes and documentation. Even if sample surveys could produce reliable results, practically all surveys were organized as exhaustive surveys (censuses).

The private sector in the country was not significant - being represented mostly by own-account workers, without other employees, engaged in repair and maintenance activities performed as their second jobs and after special registration by the local administrative authorities. Information on their numbers by kind of activity was gained from the respective registers of the administrative authorities. In fact, only a part of private own-account workers registered. Many others conducted their activities within the shadow economy. There was no information on shadow economy production, etc., but some attempts were initiated to estimate the contribution of the shadow economy to national income (net material product calculated in socialist countries with MPS system as equivalent to GDP within SNA in market economy countries).

Generally it may be stated that establishment or, more precisely, enterprise surveys were relatively well developed in the past. They functioned reliably, with practically a 100% response rate, and were based on reliable records of the reporting units being centrally harmonized with a uniform system of definitions and classifications. The same classifications were used at both the enterprise and central statistical level.

Problems Arising in Establishment Surveys in Connection with Transition of the Economy

Development of Private Sector

The situation has changed dramatically since the political and social changes of 1989, namely in connection with the beginning of the transition of the economy to a market-orientated one and rapid development of the private sector. While, in 1989, employment in the private sector was estimated at 1% of the total labour force, it grew to 6% in 1990, 16% in 1991, and is estimated to have exceeded 25% in 1992. The contribution of the private sector to GDP was estimated at more than 10-15% in 1992. Taking into account employment in the cooperative sector (which still has some features of the state sector) and employment in various membership organizations and mixed ownership units (different shares of private, cooperative and state ownership), employment outside the typical state sector is increasing considerably.

The genuine private sector in the country has different forms for the time being:

Small businesses - created either by direct foundation or, in the case of domestic firms, usually through so-called small privatization (sales of smaller establishments of existing state enterprises in auctions to interested entrepreneurs).

Joint ventures of domestic and foreign firms.

Large firms created through the process of so-called large privatization during 1992. This took place either

by sales of large units (larger establishments or whole enterprises) or by coupon privatization (sales of former state enterprises after their transformation to joint stock companies to the population for a quite low administrative fee). However, firms sold through coupon privatization mostly operated with the old management during 1992. Real changes in economic behavior of the firms are expected from 1993 on.

Most significant and numerous, however, are sole proprietors (unincorporated units not registered in the business register of firms). Sole proprietors are typically own-account workers without any or with only a few employees. On average, they employ only one other worker. Exceptionally, they may employ up to 25 or more workers.

The cooperative sector in the country, which under normal circumstances usually is considered as part of the private sector, could be considered as truly part of the private sector once transformation takes place in the producers' cooperatives, especially in agriculture, probably during 1993.

In the case of larger, private units there usually are no significant problems with statistical reporting, although there are signs of increasing non-response in the case of foreign firms or joint ventures. In the case of small private businesses - small firms and sole proprietors - the state statistical reporting system is facing serious new problems:

Enormously rapid increase in the number of units. For example, at the beginning of 1993 more than 1.2 million sole proprietors in the Czech Republic registered with local administrative institutions and another several thousand small private firms operated in various branches of the economy. This disabled or at least complicated data collection by up-to-now existing forms. Moreover, in the case of sole proprietors, only part of them are conducting their businesses as their main jobs. Others may be multiple job holders still having their main jobs in the state or mixed ownership sectors.

Problems with the statistical register of reporting units. In principle, not only firms (registered in the business register of firms by courts of law) but, also, sole proprietors (registered by local administrative bodies mainly for taxation purposes) appear in the statistical register of reporting units with their own identification numbers. In practice, there are significant problems in properly updating the register. There is usually at least a two-month delay in entering new firms into the register. Dying firms often remain in the register well after their demise. Other problems relate to properly locating the registered units and changing addresses, changes in the kinds of businesses, problematic sampling frames, etc.

Increasing unwillingness on the part of some firms to cooperate with statistical bodies resulting in high non-response rates (very often exceeding 50% or more). This occurs partially because of perceived confidentiality problems although confidentiality is fully guaranteed by law. Other firms simply refuse to report claiming they have little time for this additional administrative work or because they consider their businesses as their private matter. In the early stage, many firms did not even present their tax declarations to the revenue bureaus.

Low level administration of the smallest units, often performed by the owner or with the help of another less qualified person. This results in a very simple recording system used within the units enabling statistical bodies to ask only simple questions with very limited scope about their activities.

All these problems made it necessary for the statistical organizations to formulate new goals for establishment surveys for the private sector. Decisions had to be made concerning new concepts, definitions, and classifications. Also, agreement had to be reached on new and proper forms of data collection. The following parts of the paper deal with each of these items.

New Goals of Establishment Surveys

Small, private business statistics are a part of the whole statistical system only, of course. Before deciding upon the concepts for these kinds of statistics it was obviously necessary, as the first step, to formulate new goals for establishment surveys in general. On this basis, it was possible to specify the special goals of small, private business statistics. When doing so new needs and conditions had to be taken into account based on the principles of international experience and, also, taking into consideration national needs specific to the transition period.

The main goals were formulated as follows:

To obtain necessary information as far as possible about the complex character of the situation and development of individual industries, sectors of the economy, and the economy as a whole, i.e. focus on main inputs (fixed assets, labour, current assets) and outputs (production, sales), including information on financial flows and economic results of the units.

To obtain this information by detailed industrial breakdown and product classification where relevant.

To obtain information both for operative purposes for a limited scope of variables (collected at least on quarterly basis due to rapid development of some branches, such as services, and some sectors - private sector) and in full concepts for longer-term analytical

purposes (collected annually).

In connection with the transition from MPS to SNA, to obtain simultaneously the necessary information for analytical and decision-making purposes, and national accounts purposes.

To decide proper reporting and statistical units, i.e. establishments for production variables and enterprises for financial indicators on flows and stock.

While respecting specific needs of individual industries, to implement the main modules in a unified way for all the branches with specific modules for industries where useful.

To reduce the reporting burden on the reporting units not only by proper combination of sample and exhaustive surveys but by attempts to avoid duplication in reporting of data by reporting units through different surveys (main principle: less work for reporting units, more work for the statistical bodies).

These proclaimed goals can be achieved only gradually during the whole process of the transition of the statistical system.

On this basis only, it was then possible to decide the limits of surveys for the small, private business sector. It was possible to determine the necessary departures and simplifications required and to develop detailed concepts for individual surveys. Generally speaking, the main idea was to procure relatively reliable information (anyway in reduced scope) in the necessary periodicity and with sufficient breakdown on the situation; structure; and especially, development trends of this sector. Decisions also had to be made on suitable data collection forms. The analyses showed serious limitations for this sector, however, resulting in important differentiation as concerns the kind, scope, breakdown of variables, data collection forms, etc.

New Concepts, Definitions and Classifications

Within the framework of the transition of the whole statistical system of the country, there appeared a need for gradual implementation of international recommendations and standards of developed countries during the preparation of individual surveys for small, private business statistics. Particularly when taking into account the predominant role of the small, private business sector in the area of different services. The general harmonizing framework for this was the transition of former MPS to SNA with all the respective definitions, concepts, and classifications. However, until 1992 the national administrative rules differed in many respects from the system used in developed countries with market economies. There was no V.A.T. but still an old system of turn-over taxes. Instead of social insurance contributions the employers paid a special wage-bill tax. The whole income and profit taxes system differed significantly from what was usual in developed countries. All of this had to be taken into account within the concepts of the respective statistical surveys. Since 1993, there has been a complex change in the whole administrative system in the country. So that new surveys being prepared can, in principle, respect the concepts used in the developed countries. This is, of course, more relevant to surveys for larger establishments than for small businesses.

Since 1992, the former national industrial classification system (based mostly on the recommended system within CMEA countries) had to be replaced with the internationally agreed upon ISIC-Rev. 3 (or its European Community modification NACE - Rev. 1). Preparation is gradually being made, also, to implement the international product classification CPC. Implementation of ISIC (NACE) was especially important for the small, private business sector as the old national industrial classification system did not allow for proper international comparisons. The old system was, also, simply an improper tool for monitoring the industrial changes and effects of the privatization process taking place in the economy. For example, one of the problems appeared in the classification of repair and maintenance activities of durable and other industrial products for personal use - from the very beginning the domain of small, private business. According to the national classification system, this was considered not as services, but as manufacturing. This resulted in a paradox. The more the private sector advanced in services, the more important role in the structure of the economy statistically was attributed to manufacturing of goods, which meant serious deformation of real economic structure and monitored structural changes.

New Forms of Data Collection

After detailed analyses of needs and possibilities, two main principles were agreed upon for preparation and conduct of all establishments surveys, at least during the transition period of the economy:

There is no differentiation in the duties of reporting units due to different forms of ownership - private, joint ventures, state units, etc. In principle, they all have the same reporting duties. The only differentiation made with respect to periodicity, scope of variables, and questionnaire forms, is due to different establishment size and, in some cases, the legal form of units.

Exhaustive surveys for larger and medium-size units are newly to be combined with sample surveys for smaller units.

The following data collection system is used in the

country for the time being:

Medium and larger size establishments and enterprises of all forms of ownership with at least 25 employees face compulsory reporting on the full scope of variables within the individual surveys. Main modules are harmonized in all the services and production of goods industries, with a quarterly and annual reporting system. In manufacturing, construction, and transport there is even monthly reporting. Data is collected by mail, still having the character of exhaustive surveys.

Small firms with up to 25 employees, again of all forms and kinds of ownership (but mostly typical in the private sector), face compulsory reporting, too. However, there are low response rates in practice. There is a significantly reduced scope of variables, again mostly harmonized for the individual industries, with quarterly and annual reporting conducted by mail in the form of sample surveys.

Sole proprietors (unincorporated units, not registered in the register of legal firms) have no regular compulsory reporting duties at all. Necessary information is collected half-yearly by means of personal interviews of a voluntary character in a very limited sample of units (approximately 0.5%). "Soft data" is also collected on problems connected with their economic activities and possible ideas on solving them, etc.

The system showed that the principle operational problems complicating the representativeness and reliability of results are mostly connected with weighting methods. The sampling frame is not quite reliable due to problems in updating the statistical register of the units. Another serious problem relates to the increasing informal sector, having in the country mostly the character of a hidden, shadow economy.

In principle, the informal sector involves probably quite legal activities which are performed in an illegal way--without proper registration, etc. Usually it is difficult to measure informal sector activities - part of the private sector anyway - directly. Some indirect measures must be taken at least to estimate its possible scope and development tendencies. Based on macroeconomic balances of labour resources (population of working age, foreign workers in the country, working population in post-productive age) and their utilization (preparation for future jobs in schools of various types, reported employment and unemployment) the increase in the informal sector for 1991 for the Czech Republic could be roughly estimated to involve 200 thousand workers and increased by another estimated 100 thousand for 1992 (4% and 2% respectively of the total labour force). A part of these workers are working illegally abroad while another part are doing unregistered and unreported activities within the country - trade, repair and maintenance, production of various goods and services. Of course, the informal sector is not unknown even in the developed countries. But it probably may not always be so significant and, what is even more important, it may be usually more stable, with a more or less constant ratio. It may be pretty well assumed that in the transition countries this sector may be more important and is still increasing. This really may negatively influence the reliability of the statistical surveys.

The Links Between Household and Establishment Surveys and Administrative Records

Although establishment surveys even within the small, private business sector have their inevitable role, the specific character of this sector (often very small units with limited reporting possibilities) calls for utilization of other sources of information as well and for their mutual combination.

Among the other possible forms of data collection in the transition countries may belong various types of household surveys. Together with often used various income and expenditure surveys (family budgets) characterizing the situation of the families, there is a new special type of household survey--labour force sample surveys--being gradually implemented in the transition countries. At this time labour force sample surveys are being conducted in Hungary, Poland, and the Czech and Slovak Republics. These surveys can provide useful information on at least some of the aspects of the small, private business sector. Very often this is the only source of information on employment of own-account workers or even the whole group of self-employed. Proper combination with results from establishment surveys (often giving information on employees only) may provide reasonable information on the scope and structure of total employment. Of course, this kind of survey may hardly provide information on the economic situation (production, financial flows, and results) of the interviewed units. Anyway, Czech statisticians, having just begun with labour force household surveys (on a quarterly basis), do not have sufficient experience yet to know to what extent this kind of survey may contribute to better knowledge of small, private business activities.

Therefore, it seems more important from this point of view to utilize existing administrative records, especially tax declarations of the firms and own-account workers which are regularly presented to the revenue bureaus. It also seems promising to utilize social insurance records kept by local social security institutions. In this context, it is necessary to admit,

however, that the beginnings of private business in the transition countries are usually connected with a not fully corresponding legislative system and other administrative rules. Furthermore, underdeveloped administration results in serious practical problems when attempting to utilize various administrative data for statistical purposes. This is fully true in the case of the Czech Republic and any help from experienced countries may significantly contribute to the improvement of Czech small, private business statistics.

Summary

The system of establishment surveys under the previous centrally planned economy - even if predominantly oriented towards plan control - created relatively good foundations for restructuring, inevitable changes and further development of the system during the transition period of the economy. In cooperation with international institutions (Eurostat, OECD, and ILO) as well as some national institutions of developed countries (BLS--USA, INSEE--France, Employment Department--UK, CBS--Netherlands, and others) the system is gradually being restructured and improved to meet the new needs of a market economy and some national needs typical of the transition period.

However, serious problems appear in connection with the creation and rapid development of the private sector in the Czech Republic. These problems may be occurring in other transition countries, too. In the Czech Republic, the predominant form of the private sector is very small, private firms or even sole proprietors (unincorporated units) mostly comprised of own-account workers with no or very few regular employees. The great number of these units on the one hand and limited reporting possibilities on the other hand call for different approaches in this sector than those used in the past:

A switch from exhaustive to sample surveys. In the case of sole proprietors, it is necessary to conduct personal interviews with a very limited coverage and on a fully voluntary basis.

Significant reduction in kind and scope of variables.

These attempts are greatly complicated by problems in updating the statistical register of reporting units - new and dying units, changes in kinds of activities, address changes, etc. Together with low response rates, the updating problems with the statistical register seriously reduce the reliability of the results of statistical surveys. This is especially true of detailed data by industries, territories, size groups, etc. Increasingly, the informal sector, having mostly the character of a hidden economy, is not included in the statistical register. Thus, the informal sector tends not to be captured by establishment surveys and this is another phenomenon negatively influencing the reliability of the survey results and reported development trends.

Certain hopes for gradual improvement of the situation in surveying small, private businesses are put into new kinds of sources - implementation of household labour force surveys and utilization of administrative records. Information from the household labour force survey will be available during 1993. However, it is practically limited to economic activity and working conditions only. At this time, due to not fully developed administration in the country, utilization of relevant and more complex administrative data - tax declarations from revenue bureaus, social insurance records from social insurance agencies, etc. - will be enabled probably gradually in the future only.

The exchange of information and experience of developed countries and probably of other transition countries as well and gradual utilization of the knowledge gained will undoubtedly contribute to an important extent to further development of Czech statistics in this sector. The ICES 1993 Conference can represent an important input to these efforts in transition countries.

The increasing importance of the private sector in the country is documented in annexes 1 - 3. Although the calculations of the private sector in the country are still more or less approximate character estimations of total employment, they represent important improvements in development trends reported by normal data collection forms.

ANNEX 1

NUMBER OF REGISTERED UNITS BY INDUSTRIES

1992 - FORMER CZECHOSLOVAKIA

Industries (by NACE groups)		Sole proprietors (unincor. units)	firms	TOTAL
01-05	Agric., forest., fish	74 789	4 357	79 146
10-14	Mining +quarrying	2 228	268	2 496
15-16	Food, beverages, Tabacco	14 765	2 415	17 180
17	Manuf. of textiles	15 282	570	15 852
18	Manuf. of wearing appar.	37 992	610	38 602
19	Tanning, leather prod.	4 278	222	4 500
20	Manuf. of wood products	25 136	1 069	26 205
21-22	Paper, print, publishing	6 017	1 230	7 247
23-24	Coke, petrol+chemic. pr.	959	313	1 272
25	Manuf. of rubber+plast pr	2 199	496	2 695
26	Manuf of other non-metal	7 044	879	7 923
27-28	Basic metals and met. pr	59 930	2 073	62 003
29-30	Manuf of machinery	13 769	1 758	15 527
31	Manuf of electr. machin.	11 662	628	12 290
32	Radio, telev, comm. eguip	23 102	559	23 661
33	Medical, precis, opt. ins	4 115	403	4 518
34-35	Moter veh.+trans. eguip	23 664	448	24 112
36	Manuf of furniture	34 889	1 185	36 074
37	Recycling	779	144	923
40-41	Electr., gas, steam, water	1 834	351	2 185
45	Construction	235 059	8 016	243 075
50	Sale of motor veh.+fuel	10 625	1 305	11 930
51	Wholesale trade	21 079	13 712	34 791
52	Retail trade + repair	212 565	12 651	225 216
55	Hotels and retaurants	67 530	2 523	70 053
61-63	Transport	6 161	1 540	7 701
64	Post and telecommun	769	123	919
65-67	Financial int.+insurance	2 624	1 128	3 752
70-74	Real est., rent+bus act.	255 500	19 375	274 875
75	Public administration	4 763	10 568	15 331
80	Education	14 277	4 182	18 459
85	Health and social work	4 623	4 287	8 910
90-92	Sanit., membership. org.+ recr., cult., sport	19 453	25 319	44 772
93	Personal services	28 313	568	28 881
	Not classified	.	.	.
	TOTAL	1 289 336	129 189	1 418 525

NUMBER OF REGISTERED FIRMS (LEGAL UNITS) BY SIZE GROUPS
1992 - FORMER CZECHOSLOVAKIA

Size groups by number of persons employed	Number of registered firms	Structure in %
1 - 5	96 737	74,9
6 - 24	13 212	10,2
25 - 99	9 042	7,0
100 - 499	7 628	5,9
500 - 999	1 395	1,1
1000 - 1999	679	0,5
2000 - 4999	378	0,3
5000 - 9999	86	0,1
10000 and more	32	0,0
TOTAL	129 189	100,0

EMPLOYMENT TRENDS BY KINDS OF UNITS 1990 - 1992

CZECH REPUBLIC (PREL.RESULTS)

Kind of unit	Persons employed in th.			Incr. + decr. - in th.			Index		
	1990	1991	1992	1991-1990	1992-1991	1992-1990	1991/1990	1992/1991	1992/1990
1.Establishments 25 and more empl. (exhaust.survey)1/	5091	4304	3756	-787	-548	-1335	84,5	87,3	73,8
2.Establishments up to 25 empl. (sample survey)2/	10	125	251	+115	+126	+ 241	1250	200	2500
3.Small private business (estimated)3/	188	586	880	+398	+294	+ 692	311,7	150,2	468,1
4.Free lances and others (estimated)	62	44	40	- 18	- 4	- 22	71,0	90,9	64,5
I. EMPLOYED	5351	5059	4927	-292	-132	- 424	94,5	97,4	92,1
II.UNEMPLOYED	20	130	163	+110	+ 33	+ 143	650	125	800
ECONOMICALLY AC. (LABOUR FORCE)4/	5371	5189	5090	-182	- 99	- 281	96,6	98,1	94,8

1/ Mostly state-owned character units

2/ Mostly private units

3/ Sole propritors (not registered in business register of firms) doing private business as their main jobs and full-time employees

4/ Decrease of labour force due partly to increase of economic iractivity or mostly due to increase of inreported hidden (shadow) economy

MEASURING THE INFORMAL SECTOR: AN EMPIRICAL APPROACH

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KEY WORDS: economic unit, stratification, dwelling unit, framework

INTRODUCTION

Over the last 20 years, a number of scholars and researchers have written about the informal sector of the economy but little has been done in the way of developing a viable methodology to explicitly and systematically measure it. The research that has taken place and the papers written on the informal sector thus far have relied on anecdotal information, which cannot be used to make statistical inference about the population, or on indirect methods of estimation using macroeconomic aggregates. The latter, while providing a better approximation of the magnitude of the informal sector than the former, still falls short of providing details about its size and characteristics. This is due to the limitation of the method, which is not designed to obtain socioeconomic information of the population under study.

What constitutes the informal sector, and how it is defined, has also been at the forefront of the controversy. Compounding the problem is the profusion of terms used in the economic literature to describe the sum of activities that comprises the concept of the informal sector. Economists, social scientists, and other researchers sometimes refer to the informal sector as the "shadow economy," "parallel economy," "hidden economy," "underground economy," "unreported economy," "irregular economy," "black market," and so on. The myriad of terms denotes the elusiveness of the informal sector, making it difficult to characterize and even worse to define.

One of the earliest interpretations of the informal sector was documented in an International Labor Organization (ILO) Report from a mission to Kenya in 1972. In the ILO Report, the informal sector consisted of small-scale family-owned businesses using adapted technology and labor-intensive production methods. In addition, the informal sector was characterized by the ease of entrance by new businesses into the market, and the unregulated and competitive nature in which they operated. In subsequent refinements by the ILO's Regional Employment Program for Latin America and the Caribbean (PREALC), the concept was changed to reflect the urban employment situation in Latin America. For PREALC, the informal sector was an urban employment phenomenon resulting from the excess labor supply over employment opportunities in the modern or formal sector of the economy. The excess labor supply was, in turn, caused by the migration of the rural working poor into the urban areas in search of better income and employment opportunities. Those who could not be absorbed by the formal sector had to create their own work opportunities in order to survive. Usually, these were low-skill low-productivity type of jobs given the educational attainment of most rural migrants. In a way, the informal sector acted as a safety valve by absorbing the excess labor supply that could not be absorbed by the modern or formal sector of the economy. PREALC's analysts also assumed that its size was influenced by the up and down swings of the economy. As the economy expanded and new jobs in the formal sector were being created, the informal sector supposedly was to contract and vice-versa. This was not always the case as we shall see next.

A different perspective of the informal sector was the market rationality approach given by Manuel Castells, Alejandro Portes, and others, or as Portes referred to it, the "structuralist approach." They defined the informal sector as "...all income-earning activities that are not regulated by the state in social environments where similar activities are regulated." Similar to PREALC's conceptualization, the structuralists emphasized the role played by small-size businesses employing family labor or a few hired workers and working outside existing government regulations. But unlike PREALC, the structuralists did not characterize the activities taking place in these operations as marginally productive with low levels of technology. The structuralists also did not share PREALC's conceptualization of the informal sector as "counter cyclical" in nature. They maintain that the informal sector continues to expand as the economy grows, and see a connection between the formal and informal sectors. Indeed, as modern establishments began looking into ways of reducing costs to stay competitive or to maximize profits, they started subcontracting part of their work to small unregulated enterprises. This *modus operandi* by modern sector firms circumvented costly state regulations which included government

licensing and registration requirements, taxes, minimum wages, workers' benefits, and other occupational and safety standards, but, at the same time, provided work for small enterprises. This, according to the structuralists, helps explain why the informal sector continued to expand and not contract, as PREALC maintained, in periods of upturns in the economy.

One of the most interesting conceptualizations of the informal sector, however, was offered by the Peruvian economist Hernando de Soto. In his book, *The Other Path*, de Soto viewed the informal sector as the array of economic activities performed by individuals outside the country's institutional and legal framework. To de Soto, the informal sector is the outcome of the deterioration of the agricultural sector which triggered the influx of the rural poor into the cities in search for better living conditions. Having the will and desire to work within the legal system, the rural migrants saw themselves confronted by a multitude of legal barriers and regulations imposed by the establishment that virtually excluded them from operating within its confine and protection. With little or no money, formal education, or technical training, the poor had no choice but to operate outside the legal system by creating work for themselves in order to survive in an environment which offered no other alternative.

At the other end of the spectrum, we also find those that define the informal sector as all types of unpaid activities, such as housekeeping, child rearing, voluntary work, and do-it-yourself repairs (Siesto, 1989). Although this characterization of the informal sector seems totally inconsistent with the other, it drives the point that there is no single definition regarding this elusive concept. Adding to the predicament is the manner in which the informal sector manifests itself in different countries and regions of the world. What might hold true in Latin America might not necessarily be true in East Asia or in the newly independent states of the former Soviet Union. Even within a region, there are variations in the way the informal sector is viewed or even treated by authorities. It is imperative that any strategy to measure the informal sector take into account the diverse configurations that it might take. Although the debate continues, as it has over the last 20 years, we need to move ahead and concentrate our efforts to come up with a reasonable approach to measure the informal sector. This paper attempts to present a feasible methodology for collecting informal sector data. In the pages that follow, we will discuss the survey methodology, the sample design, the survey instruments, and the fieldwork operation.

SURVEY METHODOLOGY

If we are to capture the size, growth, and characteristics of the informal sector, the best strategy is to obtain the information through a household survey. No other method could capture better the diversity of activities found in the informal sector, especially given its heterogeneity. In it, one finds all types of informal activities, from those performed on an individual basis such as the itinerant street vendors, to those performed in a group setting as in the case of small-scale manufacturing enterprises. Through a household survey, the entire spectrum of informal activities in all sectors of the economy could be covered. This is due to the fact that in a household survey, the sampling unit is the dwelling unit and information is gathered from each member of the household. Thus, the place of residence becomes the pivotal point from where data could be collected from all groups of people, regardless of their occupation or number of jobs they hold.

A DEFINITIONAL APPROACH

Probably the best definition of the informal sector is one that takes into account all income-generating activities conducted outside the country's established laws and regulations which govern their behavior. One could narrow the definition even further by presuming that these activities take place because it is the only way for individuals or households engaged in them to survive in an environment where there is no other alternative. Along this line, one could also argue that activities that meet the requirements for the first, but not the second part of the aforementioned definition, should not be considered informal. The rationale for excluding this group from the informal sector is that people and enterprises by-passing laws and regulations do so because it is economically advantageous for them and not because other means of livelihood are unavailable. If this is the case, then it is a problem of enforcement of existing laws and regulations by local authorities more than an informal sector issue. Improve the enforcement apparatus, and the problem of people or enterprises operating outside the system would subside.

The above definition would probably run into the same type of objections that have plagued other definitions in the literature. Most writers, on the topic, prefer to come up with their own definition of the informal sector which addresses their particular concerns or viewpoint. Some of the definitions advanced are clearly diametrical while others share many of the basic characteristics generally associated with informal sector activities. What is clear is that there is no strict nor

accepted definition of the informal sector. It is a concept that paradoxically everyone seems to understand but few are predisposed in agreeing with in terms of its definition.

To circumvent the definition dilemma, the proposed methodology calls for collecting information from all household members. As in the case of other household surveys, demographic data should be collected for each member of the household. Also, data on the occupational status and economic activities of all household members 10 years of age and older will have to be collected. Those identified as working for others will be asked questions dealing with social security coverage or other types of protective labor measures to determine their participation in the informal sector. For household members who are self-employed working alone or having their own business with one or more workers, questions will be posed to determine whether they are licensed or operating under any type of work permit. In addition, they will be asked a series of contextual questions dealing with their economic status to ascertain whether or not their activities could be classified as "informal." The objective is to collect as much information as possible so that data users would have the flexibility of defining the target population for their analysis. This approach would permit the gathering of data from each household member without falling into the trap of defining *a priori* the informal sector and running the risk of excluding a segment of the target population.

One concept that needs to be defined, however, is the "economic unit." Based on the methodology presented in this paper, economic unit refers to any income-generating ventures associated with the production of goods or services. These ventures could be conducted in or outside the owner's dwelling, and have one or more workers. In the case of the self-employed working alone, they themselves constitute an economic unit. Information is therefore to be collected from each economic unit surveyed. The extent of data to be collected depends on whether these economic units fall within the realm of the informal sector, the criteria being whether they comply with existing legal and regulatory codes. If they do not, then a series of questions pertaining to the economic unit will be asked. The objective is to quantify the economic unit characteristics and, most importantly, its economic contribution to the well-being of the household.

SAMPLE DESIGN CONSIDERATIONS

1. Universe

To understand the informal sector, we need to collect quantitative data about its size and composition as well as the individuals participating in it. For comparison purposes, we also need to collect data from households whose members are not engaged in any informal activities. Consequently, the universe for a survey on the informal sector should be all households where at least one of its members is engaged in an income-earning economic activity regardless of whether the activity is considered to be in the formal or informal sector of the economy. As in any other household survey, the population living in military installations or in institutions such as religious cloisters, hospitals, or prisons will be excluded. Another group that should be excluded is the homeless, since it is safe to assume that this segment of the population make their living from panhandling activities rather than informal activities. Finally, households in rural areas should be excluded too.

The rationale for limiting the universe to the urban areas is that most authors on the subject concur that the informal sector is an urban phenomenon associated, to a certain extent, with the modern sector of the economy. Although many activities performed in the rural areas could be considered to fall within the realm of the informal sector, they are viewed in the literature as "traditional" and, therefore, not part of the informal sector. Historically, traditional activities in the rural areas are carried out by farm households. These activities fall into two types: farm activities, mainly crop and livestock production for market sale or subsistence of the household members; and processing of farm products such as the preparation of food and beverages, or the processing of wool or leather produced on the farm into finished goods. The latter activities, again, could be for home consumption or market sale.

Traditional activities have generally fallen outside the reach of fiscal regulations and the protection of existing labor legislation since most farm operations are not incorporated. It could be safely argued that farmers, at least in developing countries, perceive government regulations as anathema to their interest. As a result, they have neither participated in, nor benefitted from, welfare and social security programs. If we are to

discard the premise that unincorporated agricultural activities should be considered traditional for a premise that treats them as informal, then we will be assigning the bulk of the rural area population for inclusion in the informal sector. For most statistical agencies, the cost of measuring the informal sector in the urban and rural areas would be astronomical and overwhelming in terms of human and capital resources. This is not to say that we should ignore the rural areas altogether. But for methodological and practical purposes, as well as financial considerations, it is better to concentrate all the resources on measuring the informal sector in the urban areas first. For those who feel strongly about including traditional activities as part of an overall strategy to capture the totality of the informal sector, an alternative option, albeit an expensive one, is the implementation of a household survey in both the rural and urban areas at the same time. The measuring instrument to be applied in the rural areas, however, will have to be adjusted to accommodate the peculiarities of these areas.

2. Unit of Observation, Sampling, and Analysis

There are many proponents of the "economic unit" as the unit of enumeration or observation. In fact, several statistical investigations have been conducted where the unit of observation has been the business or economic unit. Unfortunately, these surveys are often confined to economic units of a certain size or particular branches of economic activity. Perhaps this is why in the past these surveys have been subject to coverage errors. However, if we assume that the best strategy to capture the wide range of informal activities is through the household, then, by definition the household should be the operational unit of observation. The advantage of using the household as the unit of observation is that it also has relevance in connection with the sampling unit and the unit of analysis.

Given the difficulties of tracking down the location of itinerant street vendors and others operating from no fixed locations, it would be ill-advised to select a unit other than the housing or dwelling unit as the sampling unit. To begin with, it would be difficult to consider the economic unit as the sampling unit when it does not easily lend itself to measurement. Dwelling units, on the other hand, are easier to identify, list, and select for interviewing purposes. They also may be preferred as units of selection since they are of a more permanent nature than economic units. Furthermore, a dwelling unit is not subject, within a short period of time, to extreme fluctuations in number as would be the case of informal sector economic units. As previously mentioned, the informal sector is characterized by the ease with which economic units enter and exit the market, making them more difficult to measure than dwelling units. Moreover, it is through the selection of the dwelling unit that we would have access to the economic unit, and not the other way around. By way of the household too, information about the economic unit would be comprehensive and probably more precise. The basis for this argument is that information on the economic unit is to be obtained from the member of the household who makes the day-to-day decisions concerning the operation of the business.

Finally, the unit of analysis should be the household and not the economic unit. It is the combined income earned by each household member, regardless of its source, that contributes to the economic welfare of the household. For analytical purposes, it is the overall income of the household and not the income generated by the economic unit which helps us evaluate the standard of living of the people residing in the various household groups. That is, the group of persons who derive their income solely from informal sector activities, the group that relies on both formal and informal sector activities for their livelihood, and the group that does not depend at all on the informal sector. This does not preclude us, however, from utilizing the information collected from each member of the household to define and reconstitute a different unit of analysis. Indeed, in a survey of this nature there is likely to be more than one type of analytical unit involved.

3. Sampling Frame

For a household-based survey on the informal sector, the most efficient sampling frame is generally one based on the most recent census of population and housing. Census enumeration areas (EAs) used during the census could provide a very suitable frame for the first stage of selection since their boundaries are usually well-defined and information on their size and characteristics is often available. The urban EAs could be defined as the primary sampling units (PSUs). The ultimate sampling units (USUs) will be the dwelling units within the selected EAs. Although the list of dwelling units could constitute the sampling frame, experience has shown that in many countries rapid changes due to rural-urban migration and natural growth take place in urban areas. Therefore, dwelling unit lists obtained from censuses could become obsolete rather quickly. To ensure that every dwelling unit is adequately represented in the sample, it is necessary to

conduct a new listing in each sample EA. Preferably, the dwelling unit listing operation should be completed 4 to 5 weeks before the start of the interviews.

In countries with no recent population and housing census, a list of political or administrative divisions could be used in the construction of a sampling frame. In constructing this frame, either the maps must be made available or the boundaries of each area be clearly demarcated. It is not necessary to make a list of all the dwelling units within these political or administrative divisions. Similar to the process indicated above, one can use two or more stages of sampling; first selecting a sample of areas, and then making a list of the dwelling units within these sample areas only. It is also possible to use the urban frame for an existing national household survey program in order to reduce costs. The objective is to obtain an up-to-date frame which will permit the selection of the dwelling units.

4. Stratification

To increase the efficiency of the sample design, it is necessary to stratify the sampling frame into homogeneous areas. The first level of stratification would conform to the major geographic domains. The stratification scheme in most countries would correspond to three domains: the country's capital, the other principal cities (at the state, province, or department level), and the remaining urban areas. Basically, this is the type of disaggregation which will be required during the analysis of the survey data. In general, the more analytic strata which are needed, the larger the sample size must be to stay within predetermined precision requirements and obtain reliable estimates.

To further improve the efficiency of the sample design, the major geographic strata should be subdivided into socioeconomic groups when possible. Given that in most countries socioeconomic data are readily available, at least for the country's capital, it would be possible to divide the EAs into three economic strata: high, middle, and low income. This stratification scheme will increase the precision of the stratified estimates since informal economic activities are, for a vast number of people, survival mechanisms correlated with low income groups. It may be necessary to use empirical experience and field observation to classify the EAs into two or three economic substrata. For smaller urban areas, it may be sufficient to order the EAs using an economic variable such as type of housing, if available, to provide implicit stratification during the systematic selection process.

To achieve even greater efficiency in the sample design, information about self-employed persons or owners of small-scale enterprises could be collected from each household during the dwelling unit listing operation in the selected EAs. This would allow the households to be stratified at the second stage, which may further reduce the sampling errors somewhat. However, the final disaggregation of households into households with members in formal or informal activities will have to be carried out as a post-stratification operation during data processing.

5. Sample Size and Allocation

The sample size is based on the precision required for the survey estimates, the number of analytical domains required, the variability of the statistics being estimated, and the resource and operational constraints. The accuracy of the survey results depends on both the sampling error, which can be controlled by the sample design and measured through variance estimation, and the nonsampling errors which are more difficult to control and measure. The sampling error is inversely proportional to the sample size. A larger sample, however, requires a greater allocation of resources to control quality and minimize the occurrence of nonsampling errors. Therefore, in determining the overall sample size for the survey, it is necessary to take into consideration both types of errors.

Given the complexity of an informal sector survey, nonsampling error considerations are especially important. It is therefore critical to keep the sample size to a minimum provided that it furnish the level of precision required at each level of disaggregation for the estimates. Generally, the precision of the sample depends on its absolute size. The sample size required for estimates at the national level would be smaller than the sample size needed to obtain estimates for each geographic domain. That is, a similar sample size has to be allocated to each geographic domain if the same level of precision as that for the national level is needed. For most countries, however, budgetary constraints are a critical factor. In these cases, a survey with two geographic strata (the country's capital and other urban areas) would be more feasible and manageable than one with more domains, since the sample size would be smaller. In more developed countries, or where funds are available, the ideal design would be to have three geographic strata: (1) the country's capital, (2) the principal city at the state, province, or department level, and (3) other urban areas. This, of course, would require a larger sample size.

Since informal sector activities are thought to have seasonal variability, the data collection strategy should be designed to take place throughout the year to ensure representativeness over time. The sample should be spread across the geographic strata throughout the year in such a way that a national subsample of dwelling units is surveyed during each reference period. Consequently, each subsample would provide a valid estimate for the reference period it covers. This estimate, however, would have low reliability and it would not account for seasonal variability. On the other hand, the combined estimate based on all subsamples would provide a valid and reliable estimate. This allocation will also make it possible to compare quarterly and semester results at the national level.

6. Sampling Stages

The sample design should be two-staged. At the first stage, urban EAs should be selected systematically with probability proportional to size (PPS). A listing of dwelling units must be carried out in each sample EA with screening questions to determine which households have members who are either self-employed or are running a business that employs family members and/or a small number of hired workers, usually ten or less. The objective is to obtain information which could later be used to establish the stratum of households with members engaged in informal activities. In addition, the listing operation should also indicate occupancy status for the units since vacant or seasonal dwellings should not be eligible for selection. At the second selection stage, dwelling units will be selected and all households occupying the unit should be surveyed. In most cases, a one-to-one correspondence exists between dwelling units and households.

QUESTIONNAIRE DESIGN

To collect quantitative data about the informal sector, the survey questionnaire has to be appropriately designed. Adding a few questions to ongoing household survey questionnaires that are not specifically designed for gathering informal sector data would not be adequate. Given the heterogeneity of the informal sector, it is recommended that two basic recording instruments be designed: the household questionnaire, and the economic unit questionnaire. The first is to be used for collecting information about household members and the second to obtain information about economic units run by members of the household. Together, the two instruments would measure the most relevant variables associated with the target population and their enterprises.

1. Household Questionnaire

The purpose of the household questionnaire is twofold: to record information on household membership and composition, and to identify household members who are eligible for the economic unit questionnaire. In addition to the general demographic characteristics of every household member such as age, sex, literacy, educational attainment, migration, etc., data on occupational status must be obtained. Since in low-income households, and to a lesser extent in middle-income households, household members sometimes work in more than one job, it is necessary to inquire about secondary and even tertiary economic activities.

For household members identified as economically active, a series of questions will be asked related to the industry they are engaged in, their occupation, and the status of their employment. For those who work for someone else, the focus of the investigation will be directed at determining if they were covered by social security, or any other labor protection laws or regulations. On the other hand, those identified to be in self-employment occupations, which include employers and own-account workers, will be targeted for detailed interviewing using the economic unit questionnaire. Moreover, questions on income from wages and salaries should be collected in the household questionnaire. The questionnaire should conclude with questions on basic housing conditions to provide an indication of the standard of living of the household.

2. Economic Unit Questionnaire

The economic unit questionnaire should be designed to capture the different economic activities comprising the informal sector. To this effect, each sector of the urban economy should have its own section with questions relevant to the specific trade. According to the sector and type of enterprise, the questionnaire will solicit information about the size of the business in terms of employees, regardless of their paid status, type of products or services it provides, cost per unit produced, selling price per unit, number sold, whether or not it is registered with or licensed by local authorities, its location, etc.

Since the vast number of economic units operating in the informal sector are generally small-scale

operations with a high turnover and a poor history of record keeping, how could we obtain the above information? It is to this question that we now turn.

DATA COLLECTION CONSIDERATIONS

1. Reference Period and Number of Visits

In any survey the reference period for most questions in the questionnaire depends on the event's salience. For instance, a vendor selling cigarettes out of a stall, when asked how many packs of cigarettes he or she sold over the last 7 days, the answer furnished might not be as accurate as the one the person could have given had the reference period been shorter, for example, the day prior to the interview. For events that are easy to recall because of their social or economic impact on the individual, a longer reference period might be more appropriate. The purchase of a vehicle for a taxi service, for example, would be easy to recall even if it took place 12 months prior to the interview. The aim is to define a reference period that would make it easier for respondents to recall the required information accurately.

The reference period is also influenced by the frequency of visits to the sample household. Since many individuals operating within the confines of the informal sector do not keep records of their expenses nor their revenues, it is necessary to have a short reference period coupled with repeated visits to the sample household to obtain accurate information. To assist respondents in furnishing complete and consistent information, it would be necessary to visit them on repeated occasions. In each visit the interviewer would inquire about transactions which took place between the interviewer's previous visit and the present visit. A salient feature of the personal interview method with repeated visits is the high cooperation it attracts from respondents in relation to other methods. The down side is its higher cost due to the time interviewers have to spend collecting data in each sample household.

Another method that could be adopted is the diary, where at the outset of the interviewing period respondents are asked to record all transactions taking place over the reference period. At the end of the reference period, the interviewer returns to the household and retrieves the diary with the recorded information. The success of the diary, however, depends on the literacy level of the respondents and their willingness to maintain records.

To capitalize on the advantage of each method, it is recommended, where feasible, to employ both. During each visit, the interviewer could assist respondents with the recording of transactions in the diary whenever necessary. If keeping a diary is not possible, the interviewer could conduct an interview to solicit the information. As respondents become familiar with the interviewers during their repeated visits to the household, their confidence level will increase and so will their cooperation to provide better information. At this point, however, an important caveat is in order. Before deciding on a particular approach, it is essential that a pretest be conducted using several reference periods and frequencies of visits to determine which are the most appropriate for the type of activity to be measured.

2. Sensitive Questions

Income data are an intrinsic part of any statistical investigation of the informal sector. Income questions, however, are usually a sensitive topic among respondents everywhere, but ones that could be made less sensitive if worded properly and handled tactfully by the survey staff. First of all, an overall income question posed to each member of the household engaged in an income-generating economic activity would not suffice. There is a tendency by respondents, especially the self-employed and owners of small-scale enterprises, to underestimate their income or to refuse to answer income-related questions.

To overcome this obstacle, a series of questions must be asked depending on the type of activity the person is engaged in. For example, in the case of a self-employed street vendor, the approach is to ask questions dealing with the kind of goods the respondent sold during the previous day, the unit cost of each item sold, and the number of units sold. This information would allow the calculation, not only of the respondent's income for the previous day but his/her net income. This process, repeated over the number of visits envisaged during the interviewing period, will allow us to calculate the respondent's net income. Similarly, small-scale entrepreneurs will be asked the type of business they are in, the number of employees (unpaid family workers and hired laborers) working in the establishment, wages paid, raw material costs, unit price of selling items, and number of items sold during the reference period. The number of visits to the sample household will depend on the periodicity of the transactions undertaken in the establishment.

FIELDWORK

The fieldwork should consist of two separate operations: the listing of dwelling units which is used for preparing the second stage sampling frame, and the interviews in each sample dwelling. Both operations will take place over a 1-year period, with the listing of dwellings in each sample EA starting 6 weeks in advance of the interviewing period. The time interval between the two operations will permit the office staff of the statistical agency to select the sample and reproduce the listing sheets and maps.

Since population and housing census lists are subject to potential change as a result of population growth and movement, and construction or demolition of dwelling units, it would be necessary to conduct a new listing in each sample census enumeration area. During the listing operation, each listing agent would have to canvass his/her entire area following the correct physical boundaries. The objective is to list all dwelling units within the boundaries so that each unit has a known probability of selection during each stage of sampling.

Similar to the listing operation, interviews will be carried out throughout a 12-month period. The most suitable method of obtaining the information is through a personal interview. For households that have no members in informal activities as determined by responses given in the household questionnaire, only one visit would be needed to collect the information. Depending on the type of enterprise, between two to seven visits would be required to complete the economic unit questionnaire in households identified as having members engaged in self-employment activities.

CONCLUSION

Measuring the informal sector is a formidable but attainable goal, which, if properly planned and implemented could provide an informational base that permits solid analytical work to be carried out. As we have seen in the development literature, much of the research effort has been channeled to scholarly discussions of the informal sector, but little has been done by way of developing an empirical approach to measure it. There have been isolated cases where statistical agencies throughout the world have embarked on surveying some aspects of the informal sector. Although these efforts are commendable, they still fall short of satisfying the informational needs of most users. Perhaps, in their struggle to succeed in a sector that defies measurement, statistical agencies have overlooked one of their most basic and frequently used approaches to data gathering--the household survey.

It is through a household survey that we will be able to cover all segments of the population in every type of economic activity and industry. Using the dwelling unit as the sampling unit gives us the ability to reach every household, every individual, and every economic unit run by household members from within or outside of their residence. Further, in an attempt to by-pass the controversy surrounding the operational definition of the informal sector, this paper presented an approach that would allow statistical agencies to concentrate on data collection without deciding *a priori* who is to be included in the survey. It is up to the data users to decide, once the data are processed, how to define the target population based on their analytical needs. Since there is no consensus among researchers on an operational definition of the informal sector, developing a definition limiting the universe could result in the deliberate exclusion of some segment of the target population. The one exception is the population in the rural areas which this paper proposes to exclude. However, as we previously pointed out, their exclusion would not be permanent. Given the limited resources available, statistical offices should concentrate first in measuring the informal sector in the urban areas. Also, statistical offices worldwide have experience carrying out household surveys which could provide them with a head start on an investigation of the informal sector. In addition, sample EAs in urban areas are relatively easy to reach by the interviewing staff, who, in a survey of this nature, need to visit the sample households on more than one occasion. The same could not be said of the rural areas. In conclusion, once the task of measuring the informal sector is mastered by the statistical office staff, then if resources permit, the survey could be expanded to the rural areas.

Finally, it is up to statistical offices around the world, as well as survey sponsors, to move forward and start planning surveys to measure the informal sector. For both public and private sector analysts, baseline data on informal sector activities are essential for policy formulation and program and project development. In many countries it is assumed that the informal sector is the lifeline of a vast number of people. It is imperative to try to understand how the informal sector operates in order to assess the whole economic situation of the country. And to understand how the sector operates, we need first to measure it. What we cannot afford to do is to continue to ignore the growing importance on the economy of this sector.

ENDNOTES

1. Edgar Feige has helped clear some of the misunderstanding related to "underground" economic activities by providing a taxonomy of four specific types: illegal, unreported, unrecorded, and informal. See Feige, Edgar. "Defining and Estimating Underground and Informal Economies: The New Institutional Economics Approach," *World Development*, Vol. 18, No. 7, pp. 989-1002, 1990.

2. ILO: *Employment, incomes and equality: A strategy for increasing productive employment in Kenya* (Geneva, 1973).

3. Portes, Alejandro and Richard Schauffler, "The Informal Economy in Latin America: Definition, Measurement, and Policies." Discussion Paper Series on the Informal Sector, No. 1, U.S. Department of Labor, Washington, D.C. 1992.

4. Castells, Manuel and Alejandro Portes "World Underneath: The Origins, Dynamics, and Effects of the Informal Economy." Pp. 11-37 in A. Portes, M. Castells, and L.A. Benton (eds.), *The Informal Economy: Studies in Advanced and Less Developed Countries*. Baltimore: John Hopkins University Press, 1989.

5. De Soto, Hernando The Other Path: The Invisible Revolution in the Third World (New York: Harper & Row, Publishers, 1989).

6. Siesto, Vicenzo. "Measuring the Hidden Economy", Invited Paper, International Association of Survey Statistician, Paris, 1989.

7. For a synopsis of the informal sector in the "Four Little Tigers" (Hong Kong, Singapore, South Korea, and Taiwan) of East Asia, see Gereffi, Gary and Lu-Lin Cheng, "The Contrasting Roles of the Informal Sector in East Asian and Latin American Development," Informal Sector Discussion Paper No. 6, U.S. Department of Labor: Washington, D.C. 1992.

8. Depending on the country, the minimum age for which economic activity questions are asked of household members could vary.

9. The rural area is made up by both farm and nonfarm households. Besides their traditional activities, farm household members, like nonfarm household members in rural areas, perform activities similar to those carried out by their counterparts in the urban areas. Similarly, nonfarm activities carried out by non-farm and farm household members could be characterized as formal or informal.

10. One example, is the National Survey of the Informal Economy (ENEI) carried out in Mexico between December 1988 and February 1989. The ENEI had the economic unit as the unit of observation.

11. Enumeration areas (EAs) are usually composed of 100 to 150 dwelling units. Very large EAs could be subdivided into smaller segments to facilitate operational and administrative procedures.

12. Other methods of inquiry are direct observation, account-keeping or diary, and mailed questionnaire.

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THE PAST AND FUTURE OF THE STATISTICAL SURVEYS OF MANUFACTURING

By
Dr. Stefania Tüü, Senior Adviser, Hungarian Central Statistics Office
Comments by John McCracken, Bureau of Labor Statistics

This paper describes in detail the statistics of the Hungarian industrial sector as it was during the centrally planned period. The paper gives a lot of information about the data collected during that period, a well as the methodology used and the scope of the program.

However, the paper does not describe in the same detail the current situation. More information about data currently and the methodology used would enhance the usefulness of the paper. It seems to me that the Central Statistical Office Collects censuses rather than surveys for most of their data. Also the emphasis seems to be directed towards feeding the input - output table rather than analyzing the labor market or other factors past and future of statistical surveys of MFG in Hungary.

The paper would be greatly enhanced by including a description of the methodology used for the transition and plans for the long run future. Also, the paper may include a better statement of the data needed for the current period and the future.

The paper seems to be imposing the statement of data for the same data the was needed in the centrally controlled system on the new market system. Needs are different for the market system. A lot less data probably are needed under the new system.

Countries in transition should redefine needs in light of the new structures of their changed economies. Market systems do not require the amounts and forms of data that a centrally managed system does.

I would propose that specific data series be listed and subjected to severe tests of need. Before going forward with collection, users must provide rigorous justification for any data they request.

The paper explains the budgetary limitations which impose the necessity of justifying the need and uses of any data collected.

The listing of procedures should include:

1. Start with a good frame of establishments. The characteristics, including limitations, of the frame must be completely understood.
2. Define the frequency-monthly, quarterly, annual or other time periods.
3. Define and rigorously justify infrequent surveys or censuses of the whole sector (every five years in the U.S.).
4. Refinement of frame (establishment, enterprises or legal units).
5. Refinement of surveys.

The paper speaks of the quality of data obtained from small scale and private respondents with the high refusal rates.

It is essential to focus on obtaining quality data and improving response rates by building trust through better training of interviewers, explanation and justification of the need for data requested, publication of results, and simplication of collection instruments.

How important is the economic activity of small enterprises - to use with less than 20 employees?

According to the paper, information about the economic activity of such businesses is based solely on annual tax reports. How reliable are these tax reports? Given that tax reports are often not reliable, how reliable are the estimate of the economic activity of these enterprises?

How important is the contribution of these enterprises to the overall economy - in terms of employment and in value produced?

SMALL PRIVATE BUSINESS STATISTICS IN THE TRANSITION COUNTRIES - EXAMPLE OF CZECH REPUBLIC

By
Jaroslav Kux
Comments by John McCracken, Bureau of Labor Statistics

This is a well written paper. It gives a good description of the sources of data obtained in the centrally planned economy. The paper recognizes that there was a private sector under the old central system. The author points out that the private sector was made up of two components, those businesses which registered with the appropriate State administrative authorities on the one side, and those not registered who were within the so-called shadow economy.

The paper describes the growth of the private sector and its importance within the overall economy. The paper defines the different forms of enterprises that make up the private sector.

The paper gives an excellent description of the problems in measuring the economic activities through establishment surveys and censuses.

The challenges the paper presents sound daunting, but really little different from the United States in most major areas:

United States	Czech
Lack of resources	Lack of resources
Volatility of small firms	Volatility and rapid growth of small firms
Delays in capturing changes	Delays in capturing changes
Difficulty in obtaining higher response rates	Great difficulty in obtaining higher response rates
Need to set goals and priorities	Need to set goals and priorities

The Czech Republic is to be commended for careful analysis of these factors in developing its statistical program for the transition. Highlights are:

1. Identification of priority data items (outputs, inputs, flows for SNA)
2. Industrial and product classification
3. Statistical register development
4. Household survey for data on small enterprises
5. Reducing reporting burden
6. Gradual implementation of international standards
7. Lessen reporting requirements for small firms; greater requirements for larger firms
8. Focus on linking surveys with administrative records

The Czech Republic is on the right path.

The next recommended steps are:

- Build trust with respondents and the public
- Constant evaluation of quality (defined as response and accuracy)
- Set long term goals
- Study and use of international practice

Employment and unemployment figures are given in Annex 4 showing a remarkably low unemployment rate (3.21 % in 1992). How is unemployment measured?

Anyone planning to put in place an establishment survey in a country transition from a centrally planned economy to one controlled by a free market system will profit from reviewing this paper. although written for the Czech Republic, it covers issues, procedures and problems in a very generic fashion.

The grammar used makes the paper easily and readily readable and understandable.

MEASURING THE INFORMAL SECTOR: AN EMPIRICAL APPROACH

By
Miguel Cuevas, Bureau of Census
Comments by John McCracken, Bureau of Labor Statistics

Overall this is an interesting paper. It paper describes an area that is very difficult to measure - the informal sector. This paper describes the concepts and problems of defining and measuring the informal sector. The paper begins with the standard - and differing - descriptions of the informal sector, how the views of it have evolved over the years. The paper outlines in some detail about conducting studies of the informal sector.

The paper recommends that a household survey is the best way to measure "the size, growth and characteristics of the informal sector. What the paper is proposing is a very complex and obviously a extremely costly operation. While it would be limited to large urban areas, it would involve, first of all a mapping and listing of dwellings (if no recent census data exist) and the necessary sample design, and secondly, a two - stage survey:

1. Household survey to identify persons working in the informal economy, and
2. A survey of the economic units in which these persons are working.

The paper suggests that the use of a diary be considered, where the respondents would record all their activities and transactions. The paper recommends that, where feasible, both methods be employed, that is interviews and diaries. Obviously, the success diary would depend on the level of literacy of the respondents as well as on their willingness to complete it.

The paper recognizes the reluctance of respondents to report their income, but thinks this obstacle can be over come by asking about the levels of production, sales, cost of inputs, and sales receipts and then calculate the person's income from these data. Besides being a very complex interview, it is doubtful such a process would yield much meaningful data. I would recommend a lot of testing before putting this methodology into a regular survey. I question whether the method is operationally feasible.

The paper doesn't describe how the questionnaire would be structured or worded, but says that - "A series of questions must be asked depending on the kind of activity the person is engaged in". If so, we are talking about a very complex questionnaire with many possible paths.

In the case of the economic - unit questionnaire, the paper is actually proposing specific sections for specific trades. This, too, would be a very difficult questionnaire to develop.

What would be the results of the survey program? Such a program, if affordable and properly conducted, would no doubt give you an interesting portrait of the activities of the persons surveyed. But would it give you a reliable indication of the size and characteristics of the informal economy?

In sum, while I agree that household surveys could shed much useful light on the informal sector, I don't think they would achieve the objectives staked out in this paper. In my opinion the paper describes a system too ambitious in its goals, not sufficiently detailed in terms of the approaches it recommends, and, most importantly, a bit unrealistic in terms of its expectations.

p. 3 You propose to encompass all definitions in the survey so that the many different variables of interest from each perspective may then be used for analysis, without defining informal sector for the users of the survey data. However, the last paragraph, p. 3, specifies that "The extent of data to be collected depends on whether these economic units fall within the realm of the informal sector, the criteria being whether they comply with existing legal and regulatory codes." Is this de Soto or structuralist specification? Such specification defines informal sector within the survey, rather than after the data all collected.

What of the case where someone works for an economic unit that is NOT located in the household (either own business located elsewhere, or other's business for which one is worker?) Who gets the establishment survey module?

p. 9, last paragraph. More interviews of informal sector households compared to households without informal sector work or workers will skew results. If during the period of the survey, changes in employment in non-informal sector households lead household members to i.s. employment (and vice versa), then results will not reflect the changing (possibly seasonal) employment composition of all households.

The 15th International Conference of Labor Statisticians adopted a set of extensive recommendations on the Statistics of Employment in the Informal Sector. A program of statistics on the informal sector, begin by using the Labor Statisticians recommendations.

This paper is a good start in approaching the problems of measuring the informal sector, but needs to be expanded to address a wide range of issues.