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SOURCES FOR IDENTIFICATION OF ENTERPRISE GROUPS (BEFORE PROFILING)

Practical Problems of Maintaining Business Registers in Developing Countries

Note by United Nations Industrial Development Organization

I. INTRODUCTION

1. Ever since the inception of United Nations Industrial Development Organization (UNIDO) statistical activities in 1979, one of its main components has been providing technical assistance to developing countries in the field of industrial statistics. At the outset, the general purpose of the programme was to contribute to the world industrial statistics programme by improving "a developing country's capability to collect, process, use and disseminate industrial statistics". The business register was always a key element of the capacity development programme of UNIDO, as its quality predetermined, to a significant extent, the reliability of industrial survey results. The importance of the business register in industrial statistics has been twofold. First, it produces a business directory with key information on industrial entities that are relevant and useful to the business community, which lists the industrial enterprises with their head-office contact addresses, as well as the location of production units, plants, factories and ancillary units. Secondly, the register provides the basis for sector-specific statistical surveys. A well-defined, comprehensive and regularly updated business register allows statisticians to improve the design of their industrial survey and apply, whenever necessary, sampling techniques that reduces the time and cost of data collection, and increase the precision of statistics.

2. The start of the UNIDO technical assistance programme in the 1980s coincided with the World Industrial Statistics Programme of 1983, which aimed to guide national statistical activity in industrial census-taking. The recommendations in the 1983 Programme made specific mention of UNIDO, as a specialized international body, which required "…improvement of the flow of information on industrial activity and structure as a means of accelerating economic and social development" (United Nations, 1981). At the outset of this programme, it was recognized that an establishment register would not normally be available. Accordingly, a recommendation was made to conduct "… a full coverage canvassing of recognizable industrial establishments in order to organize the establishment register for use in a system of industrial surveys". This statement is a true reflection of the reality in many countries to date.

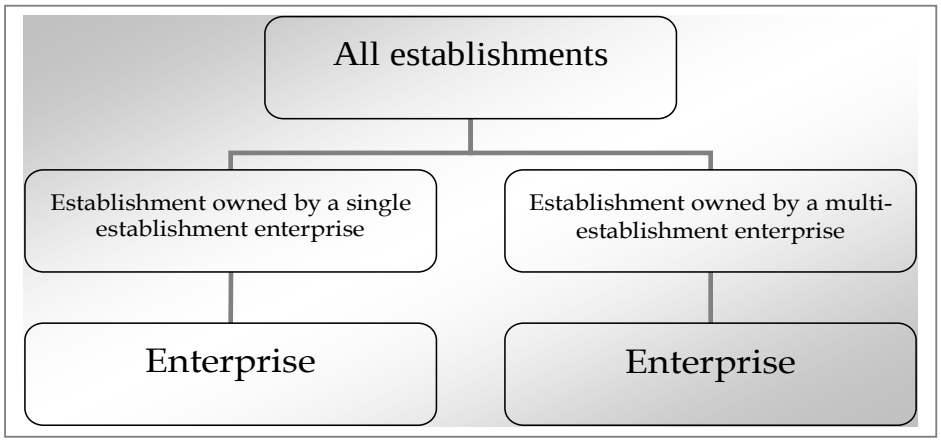
3. The business registers, which have been created and maintained in many developing countries, including those established under UNIDO technical assistance, are actually the register of establishments. In recent years, efforts have been made to distinguish between establishments, as a part of the single or multi-establishment enterprise. For establishments under a multi-establishment enterprise, the name of the parent company is recorded in order to establish the link between the enterprise and its establishments. Establishments are classified by the kind of activities adhering with the international standard of industrial classification (ISIC). Other major classification criteria are legal organizations, namely, incorporated or unincorporated ownership, such as private, government or foreign investment. This paper aims to describe the structure of the business registers and the updating methods adopted by some developing countries.

II. STRUCTURE OF THE BUSINESS REGISTER

4. In contrary to European practice, an establishment is the unit of primary importance for all business statistics operations in most developing countries. The European Union (EU) system of business statistics lists eight different types of statistical units. However, establishments are not mentioned in that list. In most developing countries, concepts and methods employed in business statistics are mainly based on the International Recommendations for Industrial Statistics (IRIS)[1] approved by the United Nations Statistics Commission, which clearly states that the statistical unit for industrial statistics operations should ideally be the establishment. This is because it is the most detailed unit for which the range of data required is normally available. With particular reference to industrial statistics, the System of National Accounts 2008 also mentions that an industry consists of a group of establishments engaged in the same, or similar, kind of activity. Based on this conceptual framework, the register created and updated in statistical practice of developing countries refers to establishments. In recent years, however, efforts have been made to establish a link between establishments and the parent enterprises.

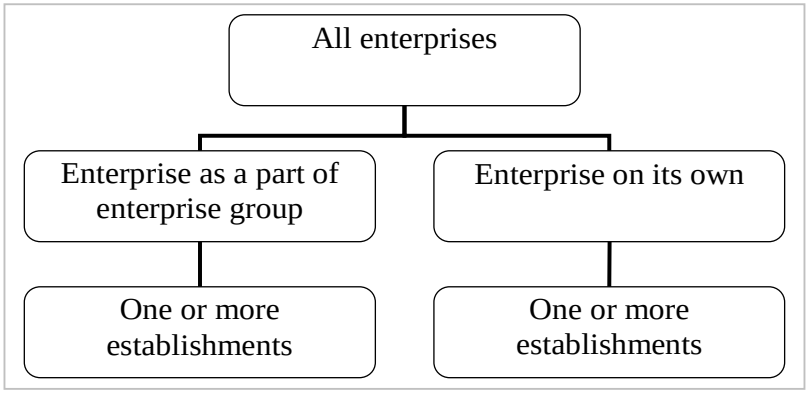
[1] United Nations Statistical Commission approved new recommendations in 2008, which supersede IRIS of 1983. However, the recommendation on establishments, as an ideal statistical unit for industrial statistics, remained unchanged.

Figure 1
Establishment grouping by type of enterprise ownership



5. The establishment captures both the kind of activity dimension and locality dimension. Therefore, the register contains, among other variables, activity codes (ISIC) and area codes based on location, which might be different from the contact address. The above structure is somewhat different from the actual hierarchal structure of a business unit, because an establishment is actually a lower and more specialized unit of an enterprise.

Figure 2
Hierarchal structure of the business unit



6. IRIS-2008 provides a detailed elaboration of different kinds of statistical units in the above structure. In course of implementation of IRIS-2008, the structure presented in Figure 1 is expected to take the hierarchal shape of Figure 2 in coming years.

III. MAINTENANCE AND UPDATING THE REGISTER

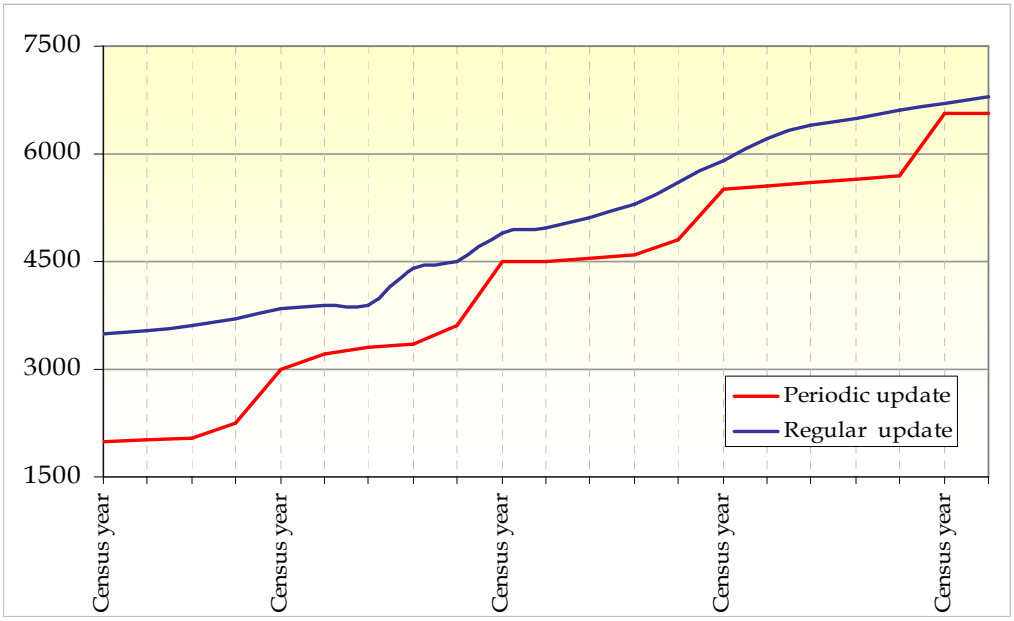
7. It has been widely recognized that the combination of a well updated register and survey data, allows the production of current industrial statistics at an acceptably precise level. However, methods for creating and updating the business register are not uniform. From UNIDO's experience in technical cooperation, often three different methods for updating the business register have been observed, which are described below.

A. Periodic updating with census data

8. The census approach with door-to-door canvassing still remains the most reliable and widely applied method for register updating. In many developing countries, the industrial, or economic, census is the single most data source for business registers. The register created from one census data is updated after another census is completed. This process might be carried out through field updates, where enumerators are provided with the list of the old register. The field staff may discover many new establishments that were missing in the pervious register or find some that no longer exist. The census can also adopt the blank slate approach, which means going to the field without any register. For example, as the National Industrial Census of Ghana - 2003 was conducted for the first time since 1987, there was no register maintained during the inter-censal period. Therefore, the 2003 census was conducted in two phases. During the first phase, a list of all establishments with basic information, such as name, location, type of activity, employment, was prepared for the door-to-door canvassing, in an effort to create an entirely a new register. During the second stage, detailed industrial data were collected, separately, for the larger establishments on complete enumeration basis, and smaller establishments on sample basis.

9. In some countries, where the industrial census is conducted periodically -every five or ten years – National Statistical Office (NSO) maintains the register based on previous census data. However, due to poor updating during the inter-censal period, the census results show a sharp increase. The growth trend of the number of establishments in a country updated regularly, looks smoother compared with a country of similar size of industrial activities where the business register is updated only periodically.

Figure 3
Number of establishments in the register in census years



10. Each year, a number of establishments are closed, while others commence operation. In developing countries, the number of births normally exceeds the number of deaths. However, a business register, which is updated only periodically with census data, does not reflect the growth trend adequately due to the following deficiencies.

1. Significant number of missing establishments

11. Missing establishments are those that do not figure in the register, but are nevertheless eligible for inclusion, in terms of the year of operation, kind of activities, size and other stipulated criteria for statistical units listed in the register. Omission of an eligible unit in the register causes the underestimation of any value derived from the registry data. This could be due to poor updating of establishments in the list that came into operation after the previous census. It is also possible that the unit was omitted in the census listing itself and was not verified with other data sources.

2. Post-census closures

12. It is important that those establishments that ceased operation after the census are deleted from the register. Causes for closures might differ. Establishments might be closed temporarily or permanently. Often closures are detected in a field survey. However, it is not always clear whether the establishment has actually closed, or whether it has merely changed its location or contact address.

3. Outdated profiles

13. Other problems relate to information on the size and type of activity of establishments that are outdated and not duly updated, which distorts the reliability of the information in the business register.

14. A business register that does not adequately reflect the changes in the business demography becomes obsolete, and registry data cannot be used for measuring current industrial growth. Therefore, in such countries, a detailed listing based on the census approach becomes absolutely necessary for any new business statistics operation.

B. Census data and administrative records

15. In some technical assistance projects, UNIDO made serious attempts to create a business register from the census list which was later updated with the administrative data. An industrial, or economic, census provides the benchmark for starting a registry database. The list of establishments identified in the census list forms the core registry, which is available at NSO (or with the in line ministry responsible for industrial census). This registry needs to be updated using an external list of establishments or enterprises obtained from external sources. There are two important aspects that should be taken into account in this process:

(a) The external list of establishments might have been drawn from different data sources. Many developing countries lack the single register system that provides unique identity code. Prior to commencing operation, business entities are registered with the Department of Industry, Investment Board, Tax authorities and other line ministries, such as Health (pharmaceutical units), Ministry of Environment (polluting companies) and so on. Each of these departments may produce its own list of business units, which could serve as potential data source for registry updating;

(b) The same unit may appear in different data sources, including the core registry, because the same unit may require to be registered with different authorities. For example, a pharmaceutical company with foreign investment might have been registered with the Ministry of Health and the Investment Board.

16. Given the above conditions, the system for identifying new establishments involves the following procedures, which are carried out in sequence:

(a) Importing, parsing and editing of the external lists. Parsing serves to put names, addresses and telephone numbers, etc. into a common format. Further editing (with follow-up telephone calls as needed) may be required to specify geo-codes and clarify questions on the address;

(b) Matching serves to identify establishments in external sources that are already found in the core registry or in another external source. Decisions, as to when a match exists, are taken by the statistical agency staff, regardless of whether a customized application is used or not, to facilitate the process. Matching procedure produces a list

of duplicated establishments based on the maximum likelihood index (MLI). This index reflects the extent to which records from different sources can be matched;

(c) A list of unduplicated candidates for inclusion in the register is prepared by concatenating all establishments in the external lists that do not match with the core register. The candidates are said to be unduplicated because, in the case of matched listings in the various external lists, only one is selected;

(d) The candidates are prioritized based on various indicators (source, size, year starting date of production, etc), in preparation for field checks. High-priority candidates are designated for on-the-spot field checks. Medium-priority candidates may be designated for phone checks, while low-priority candidates may simply not be checked at all, due to lack of resources;

(e) Field checks are carried out and the data is entered for both successful and unsuccessful candidates;

(f) The final step, copying of successful candidates in the register, can take place once the successful candidates have been vetted for possible duplication with the core register.

17. The procedure mentioned above outlines the steps of external list processing, which results in a list of unduplicated candidate establishments that are to be added to the register. This list is sometimes referred as the Results of Matching with External Sources (RMES).

18. Null responses and closures - The procedure described above does not sufficiently address the problem of closure of establishments, which requires a different approach involving field work. During the annual survey, enumerators are instructed to document the number of closures of establishments by filling out a form for all establishments, even those that do not participate in the survey. These form records null responses, which allows one to distinguish between establishments that simply fail to respond from those that have been closed or those that fall out of the scope of the survey. This data is critical both for register updating and for imputing activity of non-responding establishments.

19. Recording null responses is not widely applied among developing countries. It is therefore often unclear whether establishments did not participate in the survey because they did not wish to (non-response), or because they no longer exist. The “null response” reporting system becomes effective only when the sample size in the annual survey is large enough, or sampling is based on the cut-off size, which covers all large units above the designated cut-off point.

C. Business register corrected with the survey results

20. In countries where the business register is updated regularly through administrative data, the industrial census, or survey, results provide important information enabling one to correct the figures in the business registers. In this case, the core register comes from the historically maintained registry database, but the census, or survey results, provides more accurate data to update the register. In this case, contrary to the first, the number of establishments after the census year may actually decrease. This is due to the fact that many business units listed in the register may not be in operation any more. By using administrative data, it is easier to record births than deaths. During the census, several closed units are detected and are accordingly removed from the register.

21. The third type of register is found in countries with a relatively established statistical system. In developing countries where UNIDO undertook projects, the register was relatively well established in countries with economies in transition where the compulsory report was the major data source in the past.

IV. BUSINESS REGISTER IN NEW CONTEXT

22. Concepts and methods employed for business registers have undergone substantial changes following the new international recommendations for industrial statistics 2008. Around the same time, many developing countries have adopted the practice of conducting regular economic census and industrial surveys. The frequent statistical operations and their results have helped updating and improving the quality of the business register. Increased availability of data-processing equipment, software and information technology (IT) manpower in developing countries has also contributed to creating an efficient operational system. Despite all these positive trends, the problem of using administrative records for updating the business register still exists.

23. First, there is no single source of required administrative data for register updating. Although, the policy of a one window system has been adopted in many developing countries for the delivery of the government services to the business community, there is still some duplication of authority of registration of business activities. Second, there is a significant time-lag between registration and the actual commencement of operation. Registration authorities often do not possess information on the actual commencement dates of operation. In fact, a large number of business units may never come into operation. Therefore, more precise updating of the business register in developing countries can only be made using survey results. In countries where annual surveys of industries are conducted regularly, the survey results and administrative data have complemented each other in ensuring the timely updating of the business register.

24. Lastly, it has become necessary to introduce the multiple statistical units in the business register in a more efficient way. While the establishment remains the statistical unit for data collection, especially for production and employment, data for some other items, such as cost and receipts related to non-industrial services, can only be collected at the enterprise level. The structure of the business register should facilitate the data collection at the establishment level and final data compilation and reporting at the enterprise level.

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