Uganda Country Paper on Economic Census

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a) Why Economic Census – the case of Uganda

1. What is Economic Census?

It seems important, right from the beginning, to obtain a clear meaning of what "economic census" is as different countries may have different meanings for the terminology. In the past, the term census was used to mean complete coverage of all units under enumeration for the entire country. However, except for Population and Housing Censuses, this meaning has shifted; it no longer implies complete coverage of all businesses and establishments.

Today, it seems that an economic census may just be a large sample survey, which is instead called a census. This is because it is usually too expensive to conduct a complete coverage of all units, hence the need to sample. If however the survey is limited to covering all large businesses that pay tax, perhaps this could justifiably be called a census (of the "formal" sector). In business surveys, it is best practice to have strata that are completely enumerated. But, if smaller businesses are included on a sample basis, it really should not be called a census.

So it is not quite clear what it meant by the "Economic Census" to be discussed at the conference. In this paper we shall describe recent large-scale surveys in which annual accounting data have been sought, and the listing exercises that have preceded them. It excludes regular quarterly surveys of manufacturing, construction, cross border trade, among others.

2. Economic Surveys in Uganda

Economic Surveys in Uganda date back to the 1960s, when the first survey of Industrial Production was conducted in respect to economic activity for the year 1963. The aim was to collect basic data like Gross Output and Value Added for individual establishments, which among other uses formed a benchmark for estimating GDP. More recently a large scale survey called a Census of Business Establishments (COBE) was undertaken in 1992.

Then, in 2001, every establishment with fixed premises in the country was listed, in advance of a more detailed but much smaller survey called the Uganda Business Inquiry (UBI). Over 160,000 thousand businesses were listed, the great majority of which had less than 5 employees (informal, 87%). At the time, this exercise was seen as the compilation of a comprehensive Business Register, although there was never any possibility of keeping it updated. It was in fact a real Census.

The follow-up UBI sample consisted of 147,160 businesses, seeking accounting data for the year 2000/01. No further surveys were undertaken until recently, when funding was made available to undertake a similar survey called the Annual Business Inquiry (ABI) with a target sample of 1500 enterprises and referring to the year 2006/07. On this occasion no prior Census listing took place. The sample was taken from a list of taxpayers.

The most recent surveys conducted are included in the Table 1 below:

Table 1: Recent Economic Surveys conducted in Uganda

Exercise	Indicators	Period	Sectors Covered	Coverage –	Comment
Listing of Business Establishments	Number of businesses in the country, employment size etc	2001/02, 2006/07	All sectors except agriculture	Complete	**Sampling frame for the UBI**
Uganda Business Inquiry (UBI)	Main economic Indicators and business accounts (Value Added, Gross Output, Intermediate Consumption, among others)	2000/2001	All sectors were covered except the Public sector		**Undertaken in 2003**
Annual Business Inquiry (ABI)	Main Economic Indicators	2006/2007	All sectors are covered	Formal only	**Undertaken in 2008**

2.1 Listings of Business Establishment

In the 60's, the main sources were administrative records of enumeration of employees, membership lists to several associations, marketing boards, the Factories Inspectorate. This status continued until 1989 when the first Census of Business Establishments (COBE) was undertaken. Subsequently in 2001/02, another COBE was undertaken with the main objective of providing a sampling frame for the planned UBI. This census covered both formal and informal businesses but was restricted to businesses with fixed premises.

In 2006/2007, there was yet another listing but was much more limited in scope. It focused on mainly businesses employing 5 or more persons with the exception of such sectors as Law Firms, Clinics, Tour Companies, Forex Bureaus, among others.

This listing reported a total of nearly 26,000 businesses and of these, businesses employing five or more persons were 17,300 compared to 10,500 in 2001/02, showing a growth of over 60 percent. A distribution of businesses by employment size band showed that businesses employing 5 and above persons had the highest proportion, 64%.

Table 2: Recent Business Listings conducted in Uganda:

Exercise	Indicators	Period	Sectors Covered	Coverage –	Comment
Listing of Business Establishments	Number of businesses in the country, employment by sex, location, ownership etc	2001/02,	All sectors	All Urban areas	**Sampling frame for the Uganda Business Inquiry (UBI)**
Listing of Business Establishments	Number of businesses in the country, employment by sex, location, ownership etc	2006/07	All sectors	Only businesses employing 5 or more persons	**Sampling frame for the Annual Business Inquiry (ABI)**

2.2 Uganda Business Inquiry (UBI)

The UBI was undertaken in 2003 with a reference period of 2000/2001 and the sampling frame was the listing of businesses for the period 2000/01 which had a total of 160,000 business establishments. The sample for the UBI 2000/01 was 4300 businesses which was seen as the most affordable and practicable sample in terms of time and money. The sample for the UBI was designed while ensuring that all large businesses were covered, i.e., large employment was more than 20 employees.

In this survey, all sectors were covered including smaller businesses except small scale agriculture and the Public sector. Further more, all regions and all businesses with fixed location irrespective of the number of employees were covered. This survey had a much more detailed questionnaire but administered to a selected sample of businesses. The objective was to derive main economic Indicators (Value Added, Gross Output, Intermediate Consumption, among others).

2.3 Annual Business Inquiry (ABI)

The ABI was limited to collecting information on the formal sector. The information collected was similar to the UBI and related to 2006/2007 financial years .and it was conducted in the second half of 2008. Being annual does not mean that it will be done every year. This is due to resource constraint. Data cleaning and editing is on-going and about to be finalized.

It is important to note that, to conduct a business survey; there is need for a list of businesses. For the 2008 ABI, the sample was drawn from the 2006/2007 business register update, further supplemented by administrative data from the Value Added Tax list with the Revenue.

3. Under what circumstances the Economic Survey is conducted in Uganda and why the economic survey is necessary

In Uganda, just like in any other country, economic survey is conducted in order to update and improve estimates of economic indicators, e.g., GDP and to provide a basis for Supply-Use Tables for the country. In addition, the output of such surveys provides a basis for rebasing different series and provides sampling frames for other economic surveys as earlier mentioned whose outputs are used to measure on-going variations in business activity.

4. What are the goals, scope and coverage of Economic Census in terms of units, activities and classifications, as well as in terms of geographical coverage; thresholds used etc.

4.1 What are the goals of Economic Surveys in terms of units, activities and classifications, as well as in terms of geographical coverage; thresholds used?

The goals of economic surveys are varied. In Uganda, these were to generate data for computation of Gross Output and Value Added.

Classification of industries in the UBI and ABI was according to the United Nations International Standard Industrial Classification of economic Activities (ISIC) Rev.3,

although plans are now underway to move to ISIC Rev4. However, to be able to indicate the importance of certain key economic activities in Uganda, which would otherwise be impossible to scrutinize under the general ISIC codes, special local codes were assigned to such activities within the framework of ISIC Rev 3 and they are summarized below:

Table 3. Classifications of Special Activities

Activity Description	Local Code	ISIC Code	ISIC Activity Class under which the described activity falls
Coffee Processing	1530	1531	Manufacture of Grain Mill Products
Tea Processing	1534	1549	Other Food Products not elsewhere classified
Manufacture of Jaggery	1545	1542	Manufacture of Sugar
Cotton Ginning	1710	1711	Preparation and Spinning of Textile Fibres, Weaving of Textiles

4.2 What are the scope and coverage of Economic Census in terms of units, activities and classifications, as well as in terms of geographical coverage; thresholds used

For the COBE, all businesses with fixed premises where at least one person was employed, including market stalls, shops and kiosks were listed. All economic activities as listed in the ISIC were covered except Government Departments and Embassies. For Agriculture sector, only large scale agricultural enterprises were covered including Dairy Farms, Tea and Sugarcane Estates, Flower farms, among others.

5. Approaches and methods used in Economic Survey

One of the common practices in economic surveys is survey design. This relates to the questionnaire design and sample design and selection.

Separate questionnaires were designed for the different sectors to take into account the peculiarities in each sector and to collect data that was useful. A total of 12 questionnaires were used, 10 of which were large questionnaires meant for Businesses with Final Accounts, while the other two were targeting the informal businesses without final accounts. The questionnaires were:
1. Agriculture
2. Mining & quarrying
3. Manufacturing
4. Hotels & restaurants
5. Construction
6. Finance
7. Insurance
8. Services
9. Trade
10. Health and Education
11. Small manufacturing, mining and quarrying and construction
12. Small Trading and Services

The questionnaire was designed to provide data relating to:

- Activities and location of business

- General information on employment and ownership and statement of Fixed Assets
- Capital expenditu re at the end of each year, and
- Total sales, income and costs.

The sample design for an economic survey is usually complex as compared to the Household Surveys. The sample was always drawn ensuring that all the large businesses were covered taking into account that at least 5 percent of the population was covered. The sample size for each sector was determined using Probability Proportional to Size (PPS) based on the number of employees and number of businesses in each sector. The broad categorization adopted during the sampling was:

Table 4. Summary of Broad categories

	Industry Group
1	Agriculture & Forestry
2	Business Services
3	Community, Social and Personal Services
4	Construction
5	Education
6	Finance & Insurance
7	Fishing
8	Food Processing
9	Health & Social Works
10	Hotels & Restaurants
11	Mining & Quarrying
12	Other Manufacturing
13	Post and Telecommunications
14	Trade
15	Transport
16	Utilities

Within each main industry group, the population was further stratified by number of employees based on predetermined employment size bands for each industrial group, e.g., 1-4, 5-9, 10-19, 20-49, 50-99, and 100 plus. The actual sample size n for each stratum was determined based on the employment levels and number of businesses, taking into account that all large businesses were covered. The actual selection of businesses to be included in the survey in each stratum was selected using 'cut off' method and systematic sampling.

6. Uses of Economic Census results

The main objectives of undertaking Business Inquiries was to obtain data from the big and small business establishments that would help achieve the following aims:

i. Compute data on main economic indicators such as Value Added by Sector, Gross Output by sector and intermediate costs among others
ii. Value Added by sector is the basis of weight development in GDP estimation thus improving estimation of GDP

iii. Determine sector productivity and contribution of each sector to economic growth
iv. Development of Input-Output Tables (IOT), Supply and Use Tables (SUT) which finally feed into the Social Accounting Matrix (SAM)

v. provide data required for macro-economic modeling as required by the Ministry responsible for planning and policy formulation
vi. provide a framework for monitoring economic development over time.
vii. Development of weights for use in index number computation such as Index of Industrial Production (IIP), Producer Price Index (PPI), etc
viii. Sampling frame for other detailed economic surveys such as "The Private Sector Investment Surveys undertaken by the Central Banks", and "The Innovation Surveys by Ministry of Tourism, trade and Industry"
ix. Facilitate in-depth analysis by Researchers and their policy implication.

(b) Planning and Organization of Economic Censuses

1. Legal provisions

There exists a Statistical Law, called the Uganda Bureau of Statistics Act No. 12, enacted in 1998 by Act of Parliament that the Bureau operates within. The Act enlists the Bureau as the principal data collecting and disseminating agency also responsible for coordination, monitoring and supervision of the National Statistical System.

2. Financial and budget provisions

A large scale economy-wide survey requires adequate funding to undertake it. While the Government should provide funding for such exercises, they are very expensive. In the past, this has been a constraint and donor agencies have funded the surveys especially those conducted for the first time. These included the UBI in 2003 with reference period 2000/2001 was funded mainly by Department for International Development (DFID) and the Listing of Businesses that preceded it. The 2006/2007 Businesses Register update was co-funded by DFID and the World Bank. Since then, Government has taken over by making provision for the surveys in the national budget. The recent Annual Business Survey was undertaken with Government provision in the national budget for the FY2008/09.

3. Administrative arrangements

In Uganda, all large-scale economic surveys have been undertaken solely by the Bureau. However, before the UBI took place, stakeholders were invited to a workshop and invited to comment on the proposed questionnaires. Proper organization of office work with team spirit had been a key to a successful economic survey.

The office activities involved among others:

- Questionnaire Design
- Preparation of field activities
- Providing technical support, staff payments
- Receiving of returns
- Editing of returns
- Data capture
- Data Analysis
- Report writing and Dissemination
- Managing and maintenance of vehicles

- Other administrative work etc

The different roles were usually distributed among the staff involved in the office activities.

4. Economic Census plan and activities, incl. scope and methodology used for conducted pilot survey and preliminary sample test, zoning enumeration districts, preparation and maintenance of the establishment list for surveys, etc.

In the year 2002, prior to the full listing of businesses was carried out; a pilot was carried out in one of the Municipalities - Entebbe Municipality. The objective was to determine the accuracy of the existing list of businesses which had been compiled some years before. A complete listing of all the businesses in the Municipality was compiled and the total number of businesses on the existing list was 400. Out of this, only about 7% of the actual number of businesses was found. As a result, it was decided that a complete enumeration of all businesses in the country be done in order to obtain a comprehensive list of businesses. This meant physically walking up and down the streets registering these businesses.

This experience illustrated how quickly a comprehensive list of businesses can go out of date. It is not possible to keep such a listing up-to-date in the absence of a requirement for businesses to register with the local authorities and for the local authorities to keep a viable register. In Uganda, statistics are centralized in UBOS, which does not have Zonal/District offices.

The sample for the Business Surveys was drawn based on activity irrespective of the location. The location of the businesses was as such not considered during the sampling as such the estimates derived were at national level except for some central districts which had a proportionately large business activity. Although it was planned that the establishment list for the Business Surveys be maintained regularly, this was not possible; however, efforts are underway to maintain this list using Administrative data from the Value Added Tax and Pay As You Earn (PAYE) Registers from the Revenue Authority.

5. Staff recruitment and training

Economic surveys are usually large-scale undertakings, staff recruitment is essential to beef up the existing staff of the organization. In the listing of businesses that was undertaken for 2001/02, the organization recruited a total of 30 temporary staff to assist registration exercise. Their duties included data collection, editing, data entry and data processing. Each staff was given a code for ease of identification. In order to better guide the data collectors, a manual of instructions was prepared with the corresponding forms to be used.

For the listing exercise, all staff were trained on how to administer the questionnaire and the allocation of the appropriate codes for each activity as provided in the ISIC Revision 3.

In the case of the Uganda Business Inquiry (UBI), participants were subjected to examinations after training to test their ability to extract data from specific Final Accounts. Further, role plays were done because the presentation of an enumerator before a General Manager would in most cases determine the kind of response

obtained. It is important to note that good public relations and building of rapport between the enumerator and the respondent increased response rates. At the end of the training, the issue of confidentiality was emphasized and all staff engaged took an Oath of Secrecy.

6. Questionnaire development and design, in particular selection procedure of enumeration items

In Uganda, the Uganda Business Inquiry (UBI) covered all businesses including the smaller businesses while the Annual Business Inquiry that covered only formal sector businesses, registered for VAT and paying tax on a regular basis. The same questionnaires (with minor changes) were used in both surveys. They were designed to reflect the commercial accountant's approach to compiling accounts.

Separate questionnaires were developed for the different sectors, as mentioned earlier, to take into account the peculiarities in each sector and collect data that would be useful. The questionnaire returns provided data related to:
- Activities and location of the business
- General information on employment, and ownership,
- Statement of Fixed Assets, and
- Total sales, income and costs.

The selection procedure for businesses to be covered was based on the broad categories as shown in Table 4 further stratified by employment size band.

7. Raising awareness and promoting the response to the Economic Census

This has been a weak area in promoting response to Economic Surveys. Statistical advocacy was undertaken prior to the field work in especially the 2000/2001 UBI. This was mainly in form of radio jingles and Paper Adverts in addition to the Stakeholder workshop. In the recent survey, ABI, owing to the limited funding, not much sensitization was undertaken. However, the other option included:

- Use of introductory letters to small and large businesses for ease of access to those businesses. To a certain extent, the letters provided assurance to the respondents that the data would be kept confidential.

- Area authorities called "Local Councilors" were used as guides to show clearly the boundaries of each area for small businesses.

8. Field supervision and reappraisal of questionnaire responses

In Uganda, field supervision was in-built into all economic surveys. Field supervisions were undertaken by senior technical officers. The purpose was to:

- Provide technical support to the field interviewers in terms of
  - providing further explanation for the aim of the survey
  - Providing entry to difficult respondents
  - Meeting managers to seek their cooperation
  - Verifying the quality of data in the questionnaires
  - Checking on response rates

(c) Data collection and data processing

1. Data items collected

In the economic œnsus such as the UBI in 2003 with a reference period of 2000/2001, data items collected were on:

- Operating characteristics for the unique identification of units (kind of activity, location, ownership, year of start of operation, etc.)
- Set of economic data that included:
- Number of units
- Employment data
- Labour costs data
- Statement of Fixed Assets
- Capital expenditure at the end of the year, and
- Total sales, income and costs and details of these

In the listing of businesses undertaken for the period 2001/2, the data items collected were on:
- Operating characteristics for the unique identification of units (kind of activity, location, ownership, year of start of operation, etc.)
- General information on employment and ownership

2. Methods of data processing; wireless data transmission from field; principle of data collection and imputation by types of establishment (head offices and branch offices); guidelines for profiling multi-establishment enterprises, etc.

In the case of Uganda, all data were physically collected from the field through administering questionnaires by field interviewers. The filled questionnaires were returned to office for physical data capture by the data entrants recruited for the purpose. The principal of data collection was that all sections of the questionnaire were to be filled in and all sampled businesses were to be interviewed.

For multi-establishment enterprises, data were collected from the head office. Hence one questionnaire was administered to the headquarters of multi-establishment enterprises and all required data were obtained pertaining to the enterprise. However, enterprises which were self accounting received a separate questionnaire.

3. Use of Registers and Administrative data, for example use of tax data for the purpose of Economic Census

Last year (2008), tax data (Value Added Tax, VAT) register was used for the first time to supplement the list of businesses in order to undertake the Annual Business Inquiry Survey in FY2008/09   This list showed the average monthly turnover of registered businesses in the period 2006/07.

The advantage of the VAT register was that the register was readily available and with Turn-over data, hence grossing up could be easily done. However, the problem with the tax data was that it was incomplete. Not all businesses were on the tax list and it lacked information on location and as such it was difficult to locate these businesses. However efforts are underway to improve and update the list.

4. Use of sampling in Economic Census; sample survey application to small establishments (less than 5 employees)

In the listing of business establishments carried out in the period 2001/2, there was no sampling as all businesses were covered. However, in the UBI for period 2000/01, sampling was applied since both large and small businesses were covered. For the small businesses that employed less than 5 employees, proportional allocation was used to determine sample sizes for each stratum and thereafter systematic sampling was used to select businesses.

5. Technological Innovations for reducing costs of Economic Censuses (web based data collection system, internet survey)

In Uganda, technological innovations in data collection for reducing costs of Economic Surveys have not been used much as yet. Few business establishments have well developed web-based systems and neither does UBOS. The internet services have been slow and intermittent. Hence data collection costs in Uganda remain high as data is physically collected. This still applies up to-date, as insufficient resources are available to develop the necessary secure systems.

5. Quality assurance for the Economic Census Process

Editing of completed questionnaires was an important stage in all the exercises undertaken in the past. Data editing was taken seriously such that it was undertaken both in the field and in office. In the field, the field interviewer was the first editor who passed over the completed questionnaire to his/her supervisor for further editing. For the questionnaires on Business Inquiry (2000/01), the editing included:

- Allocation of appropriate ISIC codes
- Ensuring the return is completed
- Ensuring the questionnaire is balancing.

When errors were discovered, the supervisor went back with the interviewer to the establishment and rectified the problems with the concerned authorities. This had to be done before submission of the questionnaire to the office. In office editing, "Intelligent Edits" were undertaken. This included checking issues such as the "Cost of Staff" being greater than the "Total Income of the business". Where this happened, these were queried and follow up made and error corrected.

(d) Post-census activities

1. Post-enumeration checks

No special post-enumeration exercises have been undertaken in Uganda. Of course non-response is followed up as far as possible, but responses can still be lacking for some of the largest businesses. It is especially important to ensure the accounting data are captured accurately, as the addition of extra digits in error can have a big effect on the results. Comparison between the responses on the questionnaires and the Final Accounts of the business is also very important.

2. The Economic Census as a basis for subsequent sample survey programmes

The Economic Census was an integral part of all subsequent survey programs. For instance Uganda embarked on the production of the Producer Prices Index for Manufacturing using the data from the UBI. This data was a basis for the businesses sampled and the Gross Output figures were the basis for weight development. Also the on-going Private Sector Investment Survey (PSIS) was derived from the undertaking of the UBI and the other surveys such as the Index of Production had its weights developed based on value Added figures from the UBI. This among others illustrates the potential use of the data.

(e) Dissemination of Economic Census results

1. Economic Census reports

For all economic census es and surveys reports were produced and they include:

- A report on the Uganda Business Register Update 2001/2002 published in 2003
- Report on the Uganda Business Inquiry 2000/2001 published in 2004
- A report on the Uganda Business Register Update 2006/2007 published in 2008

However, a report on Annual Business Inquiry (ABI) for the period 2006/07survey undertaken in 2008/09 is yet to be produced.

2. Forms of dissemination

There are generic forms of dissemination of Economic Census reports. These include:

- Printed publications which were distributed to relevant stakeholders
- Printed publications put in the Organization Resource Centre
- Reports posted onto the organization website
- Reports disseminated through workshops.

The organization used all the above forms of dissemination for economic census reports.

3. Confidentiality issues

The issue of Data Confidentiality is covered in Section 19 of the UBOS Act No.12. In summary it provides that data collected on individual business establishments/persons will remain confidential to the Uganda Bureau of Statistics and the only data to be released to anyone, (other Departments, Industry groups or individuals), will be contained in tables of aggregated data from which it will not be possible to identify anything about any single establishment. Anybody who discloses information to any other person. *"commits an offense and is liable on conviction to a fine.. imprisonment or both".*
 In line with this , the Uganda Bureau Statistics (UBOS) developed "The Policy Statement of Maintaining the Confidentiality of Primary Unit Data" in 2004, which was

revised in 2005. The statement affirmed a commitment to maintaining the highest standards in the handling of information gathered from respondents and a reassurance to stakeholders of this position. The Bureau adopted a rigorous confidentiality policy which policy statement was drawn on the strengths from the past existing policies. This policy statement has continued to be firmly based on established data protection principles.

4. Evaluation, analysis and acceptance of Economic Census results

4.1 Evaluation of Economic Census results

When the results of the Uganda Business Inquiry were being prepared, we had the services of an international expert who made numerous comments on the results as they became available. This scrutiny was important in ensuring major errors were eliminated and good quality results produced.

4.2 Analysis of Economic Census results

The data capture of the UBI data was done in MSAccess while the subsequent analysis was done in SAS. However due to the increased cost of obtaining SAS licenses, the Bureau adopted STATA for analysis and is hoped that analysis of subsequent surveys will be done in STATA.

The UBI of 2000/01 data was a primary source in the development of a Supply-Use Table and a Social Accounting Matrix for the year 2002 in Uganda. The Supply-Use Table was used as a basis for benchmarking and rebasing the estimates of GDP

Among other uses, one of the uses of Economic census results is to facilitate in-depth analysis by Researchers and their policy implication. In Uganda, the research institutions that have been involved in in-depth analysis were Economic Policy Research Centre.

4.3 Acceptance of Economic Census results

The UBI results were accepted by UBOS management and published. There is no procedure for any other organizations to become involved in the acceptance of the results.

(f) Future of Economic Census in the Economic Statistics Programmes

1. Future Plans

The Bureau has designed the Long Term Survey program which takes into account the scheduling of economic censuses. It is planned that future plans for economic surveys in Uganda be held every five years to provide regular updates on the economy. Annual surveys should continue to be done. However all this will depend on availability of funds.

Key Issues

- Non-response from key enterprises

- Quality of responses

- Need to exploit administrative data to the full

- How to minimize survey costs

- What is an economic census?

- Training in the undertake of economic censuses

- Coding