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The Statistical Observer is a publication designed to contribute toward informing economists, statisticians and related professionals throughout Canada about selected statistical and research developments undertaken in DBS, in other Federal departments and agencies, in provincial departments, in universities and in business and independent research organizations.

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ERRATUM

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The article headed "New Sample, New Techniques to Improve DBS Retail Trade Estimates", (Col. 2 page 6) should be amended as follows:

Last line of first paragraph should read January 1970 (not 1960).

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# Feature

## Computerization Will Provide Rapid Retrieval of Census Data

The Dominion Bureau of Statistics has under development a computerized system for providing census data for 1971 on a user-specified basis in the large urban areas and certain other regions of Canada.

Known as the DBS Geographically Referenced Data Storage and Retrieval System (GRDSR) it is designed to meet the growing information needs of administrators, planners and researchers in the social, economic, business and other fields. The system should be particularly valuable to planners, developers and users of municipal management information systems. It could also offer important benefits for many other types of users.

GRDSR places the emphasis on making information available in larger urban areas by user-specified segments, as opposed to standard areas such as enumeration areas, census tracts and municipalities. Census data relating to these criteria, however, will continue to be provided.

The system consists of a set of data processing operations and the storage and retrieval of corresponding data on randomly accessible data storage devices. It provides flexibility for the retrieval and tabulation of any combination of census data and for cross-referencing of different data files by any user-specified area (provided always that the confidentiality requirements of the Statistics Act are safeguarded.)

GRDSR, which is the outcome of two years' research, has been designed specifically for larger urban areas for the 1971 census. Less extensive but similar capabilities are planned for the rest of the country. Although designed initially for manipulating data derived from population censuses, the system may also be extended to manufacturing, retail and agricultural census data.

It is being developed in response to increasing demands on DBS — which the Bureau can now economically service — for tabulations of statistics arranged by other than standard geographical areas (e.g. census tracts).

### Conceptual Aspects

GRDSR is based on the fact that most DBS surveys have common reference points — the addresses of respondents, which can be given geographical coordinates.

On this basis, once a survey (census, for example) is taken, the data obtained from each respondent, with his address, can be converted to a machine readable form. Then the appropriate geographical coordinate as referenced in the Universal Transverse Mercator System, is linked to the address and automatically replaces it.

A basic requirement is an address conversion file. This lists all block faces (generally one side of a street between neighbouring intersections) by street names, by block face terminal addresses, and by corresponding centroid coordinates. An essential working machine readable file, it must be kept constantly up to date as to changes in addresses, changes in street names and all other pertinent data.

### How Users May Define Areas

Using the block faces as building blocks, the urban user can define his own specific study area simply by outlining the block faces within the desired area. This may be done, and preferably should be done, on a computer-printed map which the Bureau proposes to supply.

Areas may be enclosed by streets, or by other well-defined boundaries, may cut across boundary lines of census tracts or enumeration areas (in urban applications) but may not cut across block faces. Thus the user has very considerable flexibility in areal delineation and almost unlimited practical possibilities are opened up for user whose interests are essentially small area in nature. Typical of areas that could be studied under GRDSR system are school districts, town planning districts, traffic zones, product testing and marketing zones.

It must be noted, however, that the constraint of Statistics Act confidentiality requirements — which prohibits disclosure of information on individuals or individual bodies — remains. The user should not, therefore, expect to receive data for individual block faces or even city blocks.

Benefits of the system can, however, far outweigh this constraint.

Among these benefits is that the technique might be equally usable for locally available computerized municipal data. Arrangements may be possible for local agencies to obtain the computer programs used by the GRDSR system to be locally operated on other than DBS data.

### Storing Data

Once geocoded, census data for individual records are stored as strings — each string recording the information for one data characteristic for the population reported.

Information in each string will be arranged as to:

- Individuals within households.
- Households within block faces.
- Block faces within the urban geocoded area.

There are as many data strings as there are data characteristics recorded. While the design of the data strings assures maximum efficiency in retrieval and cross-tabulating of data, the required data strings and their portions corresponding to the designated retrieval area are accessed through the block face centroids.

By this means of storing data it is expected that retrieval will be a relatively simple operation.

The initial step will be for the user to specify exact data characteristics and the precise variables for these characteristics (as in age, sex, income, ethnic origin) and the boundaries of the requested area.

Computer processing will then, as a first step, select all the block face centroids which lie within the area. From this point, a generalized program will retrieve and tabulate requested data fields bearing the selected block face identifications. No programming work will be required on the part of the user, nor any knowledge of computer programming.

### Scope and Limitations

Geocoding of urban areas requires a large initial supply of street input information such as accurate street maps and up-to-date address ranges — and this information must be kept constantly updated.

Since this information must be coded for computer processing, there are obvious limits on the number of urban areas that can be geocoded for the 1971 census. Present objectives call for geocoding those areas that had a population in the city proper in 1966 of at least 100,000 — providing also that there are local agencies in these areas that are prepared to supply and periodically update the required street input information.

An alternative form of geocoding, based for the most part on assigning geographic

# New Projects

coordinates to enumeration areas, is also planned for 1971 in all areas not otherwise geocoded. This will cover many areas that are obviously urban in character and which, in time, will be refined to a block face level.

Municipalities generally appear willing to work jointly with DBS toward attainment of the common objective — the availability of more flexible data — and the degree of their willingness to assist in supplying street input information is a determinant of achieving geocoding in their areas.

Their participation is a logical contribution. Local agencies are most familiar with their areas and have an obvious self-interest in establishing an automated, up-datable, nationally compatible urban data system that can be queried for short and long range decision making.

The first contribution sought by DBS is, of course, source documents (basically, maps and address ranges by block faces), checking of discrepant information and a continuing supply of update information and, perhaps, coding of street pattern information — all preferably through one designated agency for the urban area concerned.

In return for such participation, DBS would be in the position to provide tabulations from the 1971 census by user specified areas in the locality concerned. DBS also expects to offer the local agency access to the computer programs necessary to geocode their own data and to retrieve such data for any query area.

Such programs would be designed to operate on the type of medium-scale computer the agency might have or would be available in a nearby service bureau. These programs, typically, would enable the local agency or its clients to geocode, store and retrieve locally generated data covering such areas as assessment, planning, traffic, land utilization, zoning, education, health and welfare.

Tabulations from locally generated data could be supplemented with census data on an aggregate basis.

## The Nature of the Need

The nature of the need for such data services was underlined in the 1966 census which showed that nearly one half of Canada's population at that time — some 9.7 million people — were then living in 19 metropolitan areas. These needs do not abate. The Economic Council of Canada has

estimated that well over 80 per cent of the 25 million population it forecasts for Canada in 1980 will live in urban areas — and that about 40 per cent of these urban dwellers will live in the Montreal, Toronto, Vancouver, Winnipeg, Calgary, Edmonton and Ottawa regions alone.

The authorities responsible for the development of metropolitan areas are not unaware of their own need for gathering and computerizing data for planning purposes — and a multiplicity of computerized urban information systems could easily develop in the absence of close cooperation between the various levels of governments. Several cities may already have independent programs under way. These systems may not be compatible each with the other, however, thus creating problems in the effective exchange and utilization of information.

*Information on GRDSR system design is available on request from Mr. John Weldon, Chief, General Survey Systems, Sampling and Survey Research Staff, DBS, Ottawa. Requests for information on potential census applications of Geocoding should be directed to Mr. W. D. Porter, Director, Census Division, DBS, Ottawa.*

## Family Expenditure Surveys Extended for more Detail

Government departments, business and academics are being consulted concerning their needs from the program of national family expenditure surveys which was launched in January, 1969 by DBS. This program, which has 1969 as its reference year, consists of a series of monthly diary-keeping surveys of food expenditure throughout the year, and a recall interview survey, early in 1970, of family expenditure and income.

## Food Expenditures

The monthly program now in progress is primarily a study of food expenditures, designed to obtain detailed information on weekly household purchases of food, both in terms of quantities and expenditures. In method and content it closely parallels earlier studies such as "Urban Family Food Expenditure 1962", DBS Catalogue 62-524, at all income levels, urban and rural. Purchases of some non-food household supplies are also included.

The food survey sample of approximately 15,000 households is distributed evenly by month over the year 1969. It is expected that at least 10,000 usable two-week records will be obtained, or an average of between 800 and 900 per month. About one-third of the sample represents smaller urban centres and rural areas. Approximately two-fifths of the sample is concentrated in twelve major urban centres for which separate expenditure patterns are required. These centres are: St. John's, Halifax, Saint John, Montreal, Quebec, Toronto, Ottawa, Lakehead, Winnipeg, Regina, Edmonton, Vancouver. Each of these cities will be included in the survey in each month. Representation of the remaining cities and of smaller urban centres and rural areas will vary from month to month.

The addition of quantity information to the survey will add considerably to the value of the information collected. About two hundred food purchase items will be tabulated, as well as detail on home-produced foods and gifts of food. The non-food items include household cleaning supplies, paper supplies and food wraps, other household supplies, personal care supplies, alcoholic beverages, cigarettes, tobacco and reading materials.



Information is also collected on income, family size and other family characteristics. Results will be tabulated for each of the twelve major cities, and by province, with urban-rural breakdown by province and/or region depending on sample size. Cross-classification by family characteristics will be possible on a national level, by region and, with varying degrees of reliability, by city and province.

It is planned to commence tabulations by the middle of the year, and some preliminary results may be released before the end of 1969. However the main body of tabulations, including cross-classifications and special analytical studies, will be run after all results for the year have been accumulated.

### Family Expenditure

The second phase of the 1969-70 program, the Family Expenditure Survey, will examine expenditures on a wide variety of consumer goods and services, intended to account for *all* household expenditures in 1969. It parallels earlier studies such as "Urban Family Expenditure 1964" DBS Catalogue 62-527, but like the 1969 food study will cover all types of spending units, urban and rural, all income levels and family size groups.

Field work will be conducted in early 1970 and will ask for a recall of purchases during 1969. This survey will cover a sample of some 21,500 households from which about 15,000 usable returns are expected. The questionnaire, which will run to more than 20 pages, is now in the design stage. While it is not likely that there will be substantial additions to the item content, the revision of the previous schedule will incorporate such modifications and additions which are considered to increase materially the usefulness of the data.

This study, like the food survey, will obtain data on income and other family characteristics for analytical purposes. Thus it is expected that information on food expenditure in relation to the total family budget can be co-ordinated, as in past surveys, with the very detailed information on food expenditures obtained in the food survey. Also, in order to permit a complete accounting over the survey year, information will be obtained on changes in assets and liabilities. In this respect it is being closely co-ordinated with a study on Incomes, Assets and Indebtedness to be conducted by the Consumer Finance Staff in April, 1970.

Output from the Family Expenditure Survey will be available in the standard published report and in additional special tabulations, either as supplementary data tabulations or quantitative analyses. The processing of family expenditures surveys is slow and time-consuming, even with the advantages of electronic processing, because of the necessity for careful hand-editing and voluminous key-punching. The volume in this survey is increased more than seven-fold. A possible advantage of this greater volume, though, is the opportunity it offers for processing individual cities, provinces and regions as editing and key-punching progresses. This may permit first partial results to be released by late 1970, with subsequent releases following throughout 1971.

*Suggestions and inquiries should be directed to Miss I. McWhinney, Chief, Family Expenditure Section, DBS, Ottawa.*

### International Retail Price Comparisons Produced by DBS

Those concerned with the need for some measure of comparative living cost conditions being encountered by Canadian staffs employed abroad will be interested to know that the Prices Division of DBS produces indexes which relate retail prices abroad with those prevailing in Canada. These Post Indexes, as they are called, were primarily developed to regulate the allowance levels of Canadian Government civilian and military personnel serving Canada in some 70 countries abroad. Because of their specialized nature these indexes are not published, but organizations faced with problems of compensating employees for foreign retail price conditions might well find them to be a useful ingredient for the development of an easily administered and readily understood foreign allowance system.

Each Post Index expresses, within 5 percentage point ranges, the concurrent retail price relationship for a range of goods and services at the foreign city as compared with Ottawa. The current Ottawa price level is always designated as 100; thus, for example, a Post Index of 105 indicates that the general price level at the post for those elements of the budget being compared is about 5 per cent higher than in Ottawa. Rent differentials are excluded from the comparison because a separate allowance system, with which DBS is not directly

concerned, compensates Federal Government staffs for the accommodation while abroad. Furthermore, since Canadian public servants pay Canadian rates of income tax regardless of their place of service, income tax differentials are also excluded.

Briefly, the Post Index encompasses comparison of relative retail price conditions for such family expenditure components as food consumed in the home, meals taken in restaurants, clothing, private and public transportation, personal care, household supplies, domestic fuel and utilities, dental care, liquor and cigarettes. To the extent that government personnel serving abroad may have access to special purchasing facilities the Post Indexes reflect this fact.

Efforts are made to ensure that a full-scale price survey is undertaken at each foreign location at least at three year intervals, and more frequently when conditions so warrant. Post Indexes, once established, are subsequently reviewed regularly in the light of foreign exchange movements, and changes in both Ottawa and foreign prices. Because these indexes reflect the current price relationship between a foreign location and Ottawa, a Post Index will tend to remain unchanged when Ottawa and post price movements are broadly similar. On the other hand, new Post Indexes are established when price movements vary enough to alter significantly an existing Ottawa-post relationship.

In developing any place-to-place statistics of price or living cost differentials, formidable problems arise from geographic variations in buying habits and expenditure patterns, and from differences in the quality and availability of goods and services. These problems are magnified in international comparisons. By and large, however, techniques have been developed to overcome these problems within the limited context of the specific uses to which these indexes are meant to serve. Accordingly, although foreign Post Indexes do not have such wide applicability as to warrant their general publication, an increasing number of Canadian organizations employing staffs abroad are finding them useful in the operation of their own compensation systems.

*Information regarding these indexes is available on request from the Chief of the International Prices Section, Prices Division, DBS, Ottawa. Inquirers are asked to indicate the particular foreign cities for which comparative price information is required.*

## Prices in Eight Canadian Cities Compared in New Statistical Study

Inter-city indexes expressing differentials in retail prices among eight Canadian cities have recently been released by DBS. This new statistical study broadens the scope of index measurements that had been published in respect of food to include other types of family expenditures such as clothing, transportation, household operations, health and personal care, recreation and reading, and tobacco and alcohol.

Comparisons of retail price levels have been drawn for nearly three-quarters of the average family budget on which the Consumer Price Index for Canada is based. The new indexes serve to measure disparities in retail prices between cities whereas the Consumer Price Indexes published every month for a selection of large centres measure price movements within those cities from one time period to another. Pending further research, comparative prices of shelter (both rented and owned), domestic utilities (fuel, light and water), and restaurant meals have not been included in this inter-city study.

The indexes have been computed on the basis of retail price data collected in May 1965 and updated to May 1968 to reflect price changes during those three years. Prices in Winnipeg were selected as the base for comparisons with Halifax, Montreal, Ottawa, Toronto, Regina (food only), Edmonton and Vancouver.

*The study of Canadian inter-city retail price comparisons has been published in the November 1968 issue of Prices and Price Indexes (DBS Catalogue 62-002, 40¢).*

## Consumer Price Indexes now on 1961 Base

Canada and regional city consumer price indexes are now calculated and published by DBS on a time reference base of 1961=100, instead of the 1949 base. This arithmetic conversion does not alter the movements of consumer prices reflected in the former indexes, and no changes in weighting to reflect the content and relative importance of items in these indexes are being introduced at this time.

The revision in reference year is in keeping with the DBS policy of periodically updating indexes to more current periods. The selection of 1961 as the base will bring consumer

price indexes into conformity with other important indexes already published on this time base such as the index of industrial production and the employment and pay-rolls indexes. In view of the discontinuance of 1949 as a time reference period it is recommended that users employ the 1961-based indexes in future contractual arrangements and other uses.

For the convenience of users continuing to require the Consumer Price Index for Canada on the present 1949 base, the all-items index only, will be published monthly on both the 1961 and the 1949 base, for an interim period. The index on a 1949 base will be derived by arithmetic conversion of the 1961-based index. Users requiring the index on a 1949 time reference base should tell the Prices Division, DBS, Ottawa, the length of period for which the 1949-based index will be needed.

Although other consumer price indexes and components will in future be published on a 1961 base only, they will be made available on a 1949 base on request.

## New Sample, New Techniques to Improve DBS Retail Trade Estimates

A new sample, using new concepts and techniques to substantially improve the quality of retail trades statistics published by DBS, is expected to be operational by January 1960. The sample will result in:

- (a) more representative coverage of a number of kinds-of-business groups;
- (b) more precise data on store births and deaths;
- (c) publication of retail sales estimates for the Montreal, Toronto, Winnipeg and Vancouver metropolitan areas;
- (d) issuance of "early" summary estimates of retail trade by provinces.

In short, the new sample will be used to derive current retail trade estimates for Canada, the provinces and four metropolitan areas. These estimates will form part of the monthly publication "Retail Trade", Catalogue 63-005, and will be presented in tabular form by kind of business and by chain and independent stores, for the twelve months and cumulatively for the year-to-date.

The project is being done by the Merchandising and Services Division of DBS with the active assistance of the Sampling and Survey Research staff.

## Methodology

The sample will be drawn from a universe of about 150,000 retail businesses including chains, department stores and independent stores. Source data are monthly sales figures from firms within the sample, and inventory evaluations to be supplied each quarter.

The sample will be drawn from a "master list" and an "area list". The master list will be the DBS Employment Survey ES1 & 2 lists, together with stores in shopping centres and chain stores which may not now be on the ES lists. Because the basic sampling unit will be the retail outlet or store location, it will be necessary to send preliminary questionnaires to the head offices of each of the companies on the ES1 list to obtain the addresses and descriptions of their various outlets. This is not necessary for the ES2 list which is composed solely of single unit establishments. The master list thus obtained will cover most of the retail outlets in Canada.

As well as the master list, sample areas will be selected to insure that any stores not on the master list have a chance of being selected for the survey. All stores in the selected sample areas will be enumerated and the results compared to the master list. Those stores not on the master list will become part of the area list. A sample from the master list and stores on the area sample list will be surveyed at the same time by use of a mailed questionnaire. Further enumeration of stores of the area list will be necessary every six or twelve months to keep track of outlets which go out of business, or change their names or addresses or both. This will not be necessary for stores on the master list because the Employment Survey lists are up-dated continuously.

The samples derived from the two frames, list and area, will initially be non-rotating. However, once preliminary results have been obtained and analysed, and the system appears to be working smoothly, rotation will be well worth considering. Rotation of the sample would have two beneficial side effects: first, it would act to lower the balance in birth and death estimates by shortening the time lag in re-visiting the selected areas; second, it could be useful in lowering the non-response rate in the monthly survey.

This project is the first stage of a two-stage project. The second stage, which is expected to begin early in 1969, will deal with editing



and estimation of data, variances, and automatic follow-up of non-response. Although these are basically part of the "maintenance" of the ongoing survey, stage two will undoubtedly involve use of certain new concepts and methods. Additional details will be published later, after the major development work has been completed.

*Inquiries about the retail trade sample should be made to G. Snyder, Director, Merchandising and Services Division, DBS, Ottawa.*

### **DBS Streamlines Data Collection For Retail Commodity Sales Tables**

A trend toward "scrambled merchandising" by various kinds of retail businesses such as drug stores, grocery and combination stores, service stations and hardware stores, has increased the need for data to show what can be expected to be available from the various types of retailers. Data on retail sales by commodity is required by government, by manufacturers, by wholesalers, and by the retailers themselves.

Collection of retail sales data by class of commodity has been done in the past—for the years 1930, 1941, 1951 and 1961—by the Merchandising and Services Division in conjunction with the Census of Merchandising and Services. The introduction of a quinquennial census programme beginning in 1966 and the consequent increased workload, created a need for a streamlined approach to the mid-decade census of the merchandising and service trades. Because of this, DBS plans to repeat the detailed commodity analysis of retail sales at 5-year intervals falling between the Censuses of Merchandising and Services which are undertaken in the first and sixth years of each decade. For example, the commodity survey will be conducted in 1969, covering the 1968 calendar year. This plan reduces census work load during census years and permits utilization of the trained permanent nucleus of the Merchandising and Services Division Census Section during the intercensal period.

For the 1968 Commodity Survey, a sample of some 30,000 retail firms has been selected using the 1966 census as the sample "base". These firms will be asked to report sales broken down into about 150 important commodity groupings from which estimates of total sales by commodity classes will be made. Although this number of groupings may be considered small, it represents a

realistic appraisal of what can be expected to be available from the great majority of retailers.

*Inquiries about the commodity survey should be made to G. Snyder, Director, Merchandising and Services Division, DBS, Ottawa.*

### **Exports To U.S. by Regional Destination To be Tabulated**

For more than a year, DBS has been testing and preparing a new series of statistics on Canadian exports to the U.S., which provides much greater detail than has been previously available. In recognition of the fact that the United States is by far Canada's best customer, taking approximately two-thirds of our domestic exports, DBS has devised a series based on regional breakdowns of that country, which yields more precise knowledge to exporters of the destination of products in which they are interested. The proposed tabulation will cover all exports of Canadian goods to the United States, and the data will be cross-classified in the following fashion:

- I *By commodity group* of the Export Commodity Classification, 230 groups in all.
- II *By census sub-division* of Consignment in the United States. A census sub-division consists of two or more contiguous states of the U.S. There are eighteen census sub-divisions in all, covering the fifty states, plus the District of Columbia.
- III *By region of lading* in Canada. There are five regions, namely, Atlantic, Quebec, Ontario, Prairies, and Pacific.

The tabulation will be produced in two parts, the first part giving group detail on a value basis, the second quantity information where appropriate. The material will be produced quarterly and show a cumulative total only, for three, six, nine and finally twelve months of the calendar year. The schedule for producing this data is not yet firm, but the External Trade Division of DBS intends to commence with the first quarter of 1969. The price for this new series is \$100 a year. Those who want several copies will pay \$100 a year for the first set and \$25 a year for each additional set.

*Those interested in this project, are invited to contact Mr. G.A. Richardson, Director, External Trade Division, DBS, Ottawa, Canada.*

### **Municipal Finance Reporting Manual Incorporates Important Changes**

A new edition (the fourth) of the "Municipal Finance Reporting Manual" to be published by DBS in English and French, will reflect decisions reached at the first three sessions of the Eighth Federal Provincial Conference on Municipal Finance Statistics.

The new edition will differ in several important respects from its predecessors. It will be a series of volumes, each dealing with a specific topic, rather than a single volume. The design of accounting systems to provide information for users of municipal finance statistics will be emphasized rather than reporting formats as in earlier editions. Finally, the need to provide peripheral information to assist in the interpretation of financial statistics will receive much greater attention together with the type of information required.

The first volume of the new edition, which will describe revenue and expenditure classification systems, is now in preparation.

### **Conference Meetings**

The Eighth Federal Provincial Conference on Municipal Finance Statistics will meet three times in 1969. The Fourth Session, held in Winnipeg January 22-24, examined DBS proposals for revising asset and liability classification systems.

The Fifth Session was held in Toronto during the last week of May and a sixth is scheduled for Halifax next October. This session will conclude the examination and consider recommendations for peripheral information required for the proper interpretation of financial statistics.

*Inquiries should be directed to Mr. A.G. Kerr, Chief, Local Government Section, Governments Division, DBS, Ottawa.*

### **Timeliness in Trade Statistics**

Gains continue to be made in the timeliness of release of Canada's international trade statistics, so that DBS performance now compares favourably with that of other leading trading countries in producing comparable data.

Preliminary totals of Exports by Commodities for October 1967 were released on November 30, 1967 and for October 1968 on November 13, 1968. The detailed commodity publication for September 1967 was

# Announcing...

released on January 11, 1968, and for September 1968 was released on November 13, 1968. Preliminary totals of Imports by Commodities for October 1967 were released on December 8, 1967 and for October 1968 were released on November 18, 1968. The detailed commodity publication for September 1967 was released on January 18, 1968, and for September 1968 was released on November 22, 1968.

Gains were achieved by improved operational procedures, including an increased application of computer techniques so that the quality and coverage of the statistics remain unchanged.

Sampling applied to processing data on low-value imports is an example of the techniques used by DBS to improve timeliness and cut down the DBS work load. Imports from the United States, comprising about 70 per cent of Canadian imports were considered to be a fertile area for sampling, particularly in that 63 per cent of the lines on source documents coded for tabulation fall below \$1,000 and yet account for only eight per cent of the total value of imports. Considerable research of historical records and numerous tests on current data have resulted in use of a sampling method of processing all customs entries for imports from the United States with a total value of \$1,500 or less.

Apart from its effect on timeliness, the new sample alleviates a staff increase which would otherwise have been needed to keep abreast of the mounting document flow brought about by continuing growth in Canada's international trade.

There has been a change in section name in the National Accounts, Production and Productivity Division of the Economic Accounts Branch. The unit, which was formerly known as the Current Business Indicators and Time Series Data Bank Section, is now called the *General Time Series Section*. Responsibilities of the section are not changed.

**Dr. Paul Rubinyi** has been appointed Director of Central Planning in DBS. Dr. Rubinyi will report to Dr. S.A. Goldberg, Assistant Dominion Statistician. Planning and the related activity of priority setting have existed in DBS for a long time but in a less formal way than has now become necessary in view of the Bureau's growing and increasingly complex responsibilities. Dr. Rubinyi's functions will include the development of systematic approaches for the identification and clarification of DBS objectives and the setting of priorities in the light of costs and the massive contemporary needs for information. He will develop and guide the implementation of a Bureau-wide system of long-run planning for use in the various divisions, branches and DBS as a whole in order to promote the most effective and efficient utilization of resources. He will guide and co-ordinate, in co-operation with the Executive Committee and the directors, the planning and program budgeting activities in DBS.

Dr. Rubinyi has had a wide and distinguished career. He holds post-graduate degrees in economics and accounting and has had extensive practical experience in statistics, economic planning and accounting. During the last six years he served as a senior management consultant and corporate planning expert, latterly with the firm of Urwick, Currie and Partners, Limited.

**Dr. T.J. Vander Noot** has been appointed Associate Director-General of the Operations and Systems Development Branch. Dr. Vander Noot was previously a senior economist with the Economic Council of Canada.

**D. Keith McAlister** has been appointed Chief of the Balance of Payments Section in the Economic Accounts Branch. Mr. McAlister was previously Head of the Capital Account Sector in the same Section.

**David Buxton** has succeeded Mr. McAlister as Head of the Capital Account Sector, while continuing, for the time being, to be responsible for the Investment Position Sector of the Balance of Payments Section.

**Mr. F. Fix** has been appointed Co-ordinator of Standards, Operations and Systems Development Branch. Mr. Fix was formerly Chief, Operations and Systems Development Programming Section of the Central Programming Division.

**Kenneth F. White** has been made Director, Information Division, DBS. Mr. White was formerly Chief of Publicity Services. Prior to joining DBS, Mr. White worked for a number of years in the newspaper business, largely in financial editing.

**Pierre Joncas** is now Director of the Canada Year Book Division, DBS. Mr. Joncas was previously with the Department of External Affairs on the staff of the Canadian Embassy in Washington. He had previously worked for DBS in the Business Finance Division and the Health and Welfare Division.

**Edward J. Marten**, formerly Director, Information Division, DBS, is now Program Co-ordinator, Year Book and Information Divisions. Kenneth F. White succeeds Mr. Marten as Director of the Information Division and Royd E. Beamish has been appointed to succeed Mr. White as Chief, Publicity Services Section.

**Norman Hodge** has joined DBS as Statistics Use Development Officer, Toronto. Mr. Hodge's address is DBS, 8th floor, Arthur Meighen Building, 25 St. Clair Avenue E., Toronto 7. Mr. Hodge was formerly a statistician with Bell Telephone Company of Canada.

**Dr. Cecil Lingard** retired recently from DBS where he was Director of the Canada Year Book Division. From 1945 to 1950, Dr. Lingard was Editor of *International Journal* and Research Secretary of the Canadian Institute of International Affairs. In 1951 he became Editor of the Canada Year Book, and later Director of the Division. Dr. Lingard authored various published works on Canadian subjects and has contributed numerous articles to learned journals and encyclopedias.

**Mr. R. Ellis Drover** was appointed in September 1968 as Co-ordinator of Provincial Liaison and Consultative Services, DBS. He is responsible for promoting close co-operation and improved communication between DBS and provincial agencies. He is also directly concerned with a survey on travel by Canadians within Canada, which is being planned jointly by the Provinces and DBS. It is to be conducted in 1970.



**G. B. Joshi** has been appointed Chief of the Methods Research Section of the Census Division, DBS. Mr. Joshi was previously Head of the Statistics and Operational Research Section of the Nelson Research Laboratories, Stafford, England.

**John Bell** has been appointed Division Administrative Officer for the DBS Census Division. He comes to Census from the Agriculture Division, where he held a similar position. Previously he was with the Canadian Government Travel Bureau.

**Tom Hillis**, formerly Chief of Administration and Operations in the DBS Census Division has accepted an appointment as an Administrative Officer in the Department of Energy, Mines and Resources at Burlington, Ontario.

**Mrs. Francis Pierre-Pierre** joined DBS recently to undertake statistical analysis and development of comprehensive tabulation programs for notifiable diseases, tuberculosis and hospital morbidity statistics in the Public Health Section, Health & Welfare Division. After employment in DBS in 1966 and 1967, Mrs. Pierre-Pierre worked for approximately nine months in 1968 as an Analyst Secretary for International Telephone and Telegraph (Europe and Latin American) in Antwerp, Belgium.

**Harry Bradshaw** has joined the Census Division of DBS as Chief of the new Census project Control Section. Programme Evaluation and Review Technique (PERT) and other allied techniques will be used in this new section. PERT is a relatively modern management tool for control of large scale projects. Mr. Bradshaw has extensive experience in the organization and methods field and recently worked in the Federal Department of Transport and in the Department of Manpower and Immigration.

**R. Paul Shaw** has been employed as a rural sociologist in the Rural Data Section, Census of Agriculture, DBS. Mr. Shaw will be concerned with means for providing socio-economic characteristics of the farm operator and his household through the integration of population and housing data from the Agriculture Census. Upon completing post-graduate work at the University of British Columbia, Mr. Shaw was involved in a variety of analytical research programs dealing with socio-economic characteristics of the agricultural and industrial labour force of selected economies.

**Frederic L. Torrington** has joined DBS as Chief of the Research and Development Section, Merchandising and Services Division. During the past sixteen years, Mr. Torrington was a market research executive in England and Canada, for the past nine years serving as Vice-President and Marketing Research Director of McConnell Eastman Limited, a Canadian advertising agency.

**Dr. Laszlo Sondoki** has been appointed Chief of the Wholesale Trade Section, Merchandising and Services Division, DBS. Before joining DBS last February, Dr. Sondoki had been an economist to the Chairman of a large chain organization in England and was also employed as a marketing expert by the Ministry of Commerce in Kuwait.

**William Iwasaki**, active for many years in a number of sectors of National Accounting, recently became Chief of Analysis and Development Section, External Trade Division, DBS. Mr. Iwasaki was formerly Chief of the Balance of Payments Section, Balance of Payments & Financial Flows Division.

**Horst Stiebert** has joined the Special Manpower Studies and Consultation Division of DBS to undertake research on labour market data arising from and related to, the new Job Vacancy Survey. Mr. Stiebert is a graduate of Simon Fraser University.

**Walt Saveland** has joined the Vital Statistics Section, Health and Welfare Division, DBS, and will be responsible for analysis and research in vital statistics with particular attention to marriage and divorce. Mr. Saveland is a sociology graduate from the University of Chicago, did graduate studies at Northwestern University, and worked at U.S. Bureau of the Census.

**Judy Holmgren**, who joined the Vital Statistics Section, Health and Welfare Division, DBS, will be responsible for analysis and research in Vital Statistics with particular emphasis on computer applications to vital statistics data. Miss Holmgren is a computing science graduate from the University of Alberta.

**Mercedes Rivera** has been appointed as a subject specialist in the General Population Section, Census Division, DBS, in charge of fertility and migration statistics. Miss Rivera specializes in sociology and demographic studies.

**Paul Timmons** has been appointed Chief of Domestic Travel Survey, Sampling and

Survey Research Division, DBS. Mr. Timmons was formerly with the Special Surveys Division.

**John Brown** has been appointed Head, Transportation Research Unit, Transportation and Public Utilities Division, DBS. Mr. Brown, who has recently completed a one-year study of container rating for Atlantic Container Line Ltd., has had experience in several British transportation organizations.

**Ted Hewitt**, formerly editor of the Mechanical Contracting and Engineering Magazine, has joined DBS to conduct liaison work with contractors and contractor associations during the first annual Census of Canadian Mechanical Contractors in the Construction Section of Business Finance Division.

**Ray C. Luft**, has been appointed as Head of the Ownership Unit of the CALURA Division, DBS. He will be responsible for analysis of non-resident ownership of corporations reporting under CALURA, and for revealing the intercorporate ownership of such corporations.

**Ed. Cannon** has recently joined the Company Establishment Integration Division of the Integration & Development Branch, DBS. He will be dealing with senior officials of selected large companies to investigate the possibility of integrated reporting to DBS as an integral function of the Company's accounting procedures. Mr. Cannon was formerly Manager of Internal Audit & Methods with the Royal Trust Company at their Head Office in Montreal.

**A. Symons** has been appointed Chief of the Minerals Unit, Energy and Minerals Section, Manufacturing and Primary Industries Division, DBS. **B.J. Lynch** has been appointed Chief of the Foods, Beverages and Textiles Section in the same division. Mr. Lynch, who succeeds G. E. Clarey, was formerly head, Monthly Index of Industrial Production in the National Accounts, Production and Productivity Division.

**H. M. Pipe**, Assistant to the Director (Administration), Manufacturing and Primary Industries Division, DBS retired March 20 after 29 years in the public service. He first joined the Department of National Defence on April 29, 1940 and joined DBS in July, 1947.

**T. Kearney**, Head of the Logging and Special Surveys Unit, Forestry Section, DBS, retired in January.



# Conferences

## Canadian Police Statistics Discussed at Chiefs' Conference

"Statistics are (a) most useful and valuable tool at the disposal of the police . . . . A reliably informed public may be inclined to become more concerned with the problems confronting the police and take the positive steps necessary to assist the police in coping with crime conditions". So said Frank A. Morrow, Senior Co-ordinator, Crime Statistics, DBS, in a paper presented last year to the 17th Annual Conference of the Maritime Association of Chiefs of Police.

Mr. Morrow went on to point out that the need for police statistics is every bit as valid in improving law enforcement as are the statistical needs of government, business, and industry. Police administrators and others involved in the administration of justice need to be reliably informed at all times of the nature and extent of crime, traffic law enforcement and traffic accident problems, what is being done about them and where efficiency may be increased.

Police statistics can reveal a great deal about the known crime universe. They cover a wide range of offences including murder and shoplifting, sex offences, public mischief or wilful damage, armed robbery and muggings, discreet and delicate swindles. Persons of all ages are involved as victims or offenders and no community is immune. The range and scope of these activities are best known to the police who should accept as a duty and responsibility the provision of information concerning these problems.

The history of police statistics in Canada was outlined by Mr. Morrow who said that the manual of instruction for use of police respondents sending data to DBS is acknowledged as a model of its kind. The manual was developed by the Uniform Crime Reporting Committee which was set up by the Canadian Association of Chiefs of Police and DBS and includes representatives of the federal, provincial and municipal police forces as well as by members of DBS.

Because Uniform Crime Reporting is a far reaching program there is a need for a continued emphasis on the fundamentals to ensure a high degree of uniformity and accuracy in reported data.

The need for integrated statistics relating to the whole judicial process was discussed by Mr. Morrow who said that data on police arrests must be comparable with data on courts, jails and penitentiaries.

Mr. Morrow's talk concluded with predictions about future developments in Police and Crime Statistics.

*Enquiries should be sent to Mr. Frank A. Morrow, Senior Co-ordinator, Crime Statistics, Health and Welfare Division, DBS, Ottawa.*

## World Power Conference hears Outline of Energy Statistics in Canada

Canada's per capita energy consumption is the second largest in the world, and Canadian consumption of energy is growing considerably faster than is the population. These are among the facts presented to the World Power Conference by Robert L. Borden, Chief Energy and Minerals Section, of DBS in a paper titled, "Concepts and Principles of Energy Statistics of Canada". The Conference was held last September in Moscow.

Energy supply-demand tables by Canadian regions, showing eighteen different energy forms, have been compiled by the DBS Energy and Minerals Section for the years 1958 and 1964. These formed the basis for most of the information provided in Mr. Borden's paper. The paper also described the creation of the tables. Some of Mr. Borden's remarks about the tables are condensed here.

The basic aim of any analysis in the energy economy in any given region is to provide data to measure the supply-demand position and thereby to help in forecasting energy needs and supply. This forecasting is valuable in three specific fields: First, in the energy supply industry itself which must try to ensure that future supply will be in the amount and form required by the ultimate consumers; second in the planning activities of peripheral industries such as household appliance manufacturers; third to government in formulating policies — both economic and political — in the sphere of energy supply. For example, it is obviously important for a nation to assess its dependence on non-indigenous supplies in terms of balance of payments and international politics. Also, governments should be vitally concerned with assessing which particular consumption sectors are making the greatest demand on energy supply in order to decide whether or not it is possible to influence the demand pattern and whether or not supply can be channeled from sectors less important economically to sectors which are more important.

Energy supply-demand tables represent an attempt to balance energy availability with energy needs in sufficient detail for analysts to consider the numerous and complex inter-relationships which exist between the primary and secondary energies. It is only when these inter-relationships are known that the problems involved in balancing requirements with resources for a future period can be determined.

Energy balance sheets must show:

- (a) Total energy requirements from each consuming sector and the share each energy form, both primary and secondary, enjoys in satisfying these requirements;
- (b) The amount of primary energy needed to produce these primary and secondary forms.

Demand is the starting point of the analysis and is the main determinant of the shape of the energy balance sheets. By analysing data on the recent past, trends of consumer demand for energy can be established and with this information the attempt can be made to estimate how such trends may develop in the future. From this, the level of demand for any given future year may be estimated. From this point, it becomes possible to follow the intricate path through conversion, process losses, transmission losses, and so on, to arrive finally, at the gross supply requirements of the primary energy forms.

The energy balance sheet is a representation of what has actually happened, and, subject to certain limitations which Mr. Borden outlined in his paper, it is possible to extrapolate from the past into the future, using purely mathematical tools such as linear regression.

DBS is now preparing supply-demand data for years between 1958 and 1964. These should be available in preliminary form in 1969. Future work will include an attempt to introduce supply-demand price schedules into the study to provide further information on the interrelationships of demand, price, and intra-energy competition.

*Enquiries should be made to Mr. R.L. Borden, Chief, Energy and Minerals Section, DBS, Ottawa.*

## International Economic Association Holds 3rd Congress

"The Future of International Economic Relations" was the theme of the 3rd Con-

gress of the International Economic Association held at the Queen Elizabeth Hotel in Montreal, September 2 to 7.

Eight papers dealing with international trade were delivered. These were: "The Theory of International Trade", by Harry Johnson, London School of Economics and Chicago, "International Trade in a Non-Laissez-Faire World, by G. Ohlin, Stockholm; "The Problems of the Common Market", by A. Marchal, Paris, "International Liquidity and Basic Mechanism Reform", by T. Scitovsky, Berkeley, California, "International Trade and the Developing Countries", by H. Myint, London School of Economics, "The Problems of East-West Trade", by I. Vajda, Budapest, "East-West Trade", by A. Nove, Glasgow, and "The Development of External Economic Relations of the Soviet Union", by T.S. Kha-chaturov, Moscow.

*Copies of these papers can be obtained from L. Fauvel, Secretary General, International Economic Association, Faculté de Droit et des Sciences Economiques, 92 rue d'Assas, Paris 6, France.*

### **Municipal Finance Statistics Committee Holds first Meeting**

An even more effective link between users and suppliers of municipal finance statistics is expected to result from the DBS Advisory Committee on Municipal Finance Statistics, which held its inaugural meeting on October 9, 1968 in Ottawa. Chairman was George A. Wagdin, Director-General of the DBS Financial Statistics Branch.

The present DBS municipal statistics program and its projected development will be considered by the Advisory Committee which will recommend modification and additional requirements predicated on the members' points of view as users.

Membership of the Committee comprises representatives of the federal and provincial governments, municipal research organizations, and the universities, and DBS. The inaugural meeting discussed possible additions to membership -- for example municipal economists and planners -- and further working procedures such as regional meetings. Also, members were given a brochure on the proposed development of the DBS program and were invited to submit their comments prior to the committees next meeting, to be held early in 1969.

The DBS Advisory Committee on Municipal Finance Statistics stems from the Conference on Municipal Statistics held at Queens University, Kingston, Ontario, in May 1966. One of the recommendations of that conference was that an advisory committee on municipal statistics be established to examine "the complete range of user needs in the field of municipal finance and to advise the Dominion Bureau of Statistics and other Canadian agencies issuing statistics on the best ways and means of satisfying these needs".

*Information about the DBS Advisory Committee on Municipal Finance Statistics was provided by Mr. A.G. Kerr, Chief, Local Government Section, Governments Division, DBS, Ottawa.*

### **Social Scientists Discuss Use of Census Printouts and Tapes**

Enumeration area computer printouts for Alberta, Yukon, and the Northwest Territories, and computer tapes for the whole country containing data from the 1961 and 1966 Censuses have been acquired by the Population Research Laboratory of the Department of Sociology, University of Alberta, from the Dominion Bureau of Statistics.

A data-use workshop, jointly sponsored by the Sociology Department of the University of Alberta and the Alberta Bureau of Statistics was held on October 24 and 25, 1968, to describe these printouts and tapes to indicate how they might be used by social scientists. Consideration was also given to content of the 1971 Census as well as to future possibilities in data availability and retrieval. The work shop was attended by 96 persons, 23 of whom delivered papers.

The first session was devoted to discussion of enumeration area printouts. Dr. K.J. Krotki of the Department of Sociology, University of Alberta, formerly of the Dominion Bureau of Statistics, and prime mover behind the workshop, led off the discussion.

Dr. Krotki indicated that the ideal use of enumeration area printouts, is in local studies of small areas involving characteristics available in the printouts. Enumeration areas can be used as building blocks for the creation of areas with different boundaries than those for which data are available in standard census publications. He described several ways of using enumeration area data

to derive "user-designed areas". The first is to "define the area of one's interests in terms of enumeration areas of one of the Censuses". He felt that "enumeration areas are so small that no serious study is likely to hinge on the inclusion or exclusion of areas smaller than enumeration areas". The other method is to use enumeration areas as given but make adjustments to the overlapping of enumeration areas beyond the boundaries of the area studied.

Several papers were then presented describing how area printouts have been used. They included:

1. Study of Health Care Resources and Use
2. Community Development Research Project
3. "Royal Commission" type of study
4. Thesis Material

Mention was made that such data could be used for drawing samples, comparing samples with a population, in combination with other data, or as a major source of data.

The second session was devoted to discussion of possible uses of the data available on enumeration area computer tapes. Dr. Krotki stated that it will probably be at least one year before the research laboratory personnel will be able to retrieve information from these tapes with ease. The major use of these tapes will be in studies of user-designated areas considerably larger than enumeration areas, and national or regional studies through regression analyses. The advantage of the tapes is that they allow for many tabulations and a great deal of flexibility in delineating area boundaries.

The use of the enumeration area tapes is much more complicated than the use of enumeration area printouts. However, a standard program has been developed to use information from the tapes once it has been retrieved. This program, SPSS (Statistical Package for Social Sciences) makes it unnecessary to write a new program every time information from the tapes is to be used.

The third session involved retrieval and data storage for the 1971 Census of Population and Housing. During this session representatives from Dominion Bureau of Statistics, Dr. I.P. Fellegi and Mr. R.J. Davy, discussed various aspects of the 1971 Census. Dr. Fellegi described and discussed Geocoding in both urban and rural areas. He also discussed "accuracy checks" that occur in censuses. He described some of the



implications of sampling for the 1971 Census and made the point that sampling reduces the total error that would otherwise creep into the Census if 100% coverage for all questions were practised.

Mr. R.J. Davy discussed the content of the 1971 Census. He discussed self-enumeration, which is to be used extensively in the 1971 Census and is expected to improve quality of the answers because, in the first place it should eliminate enumerators' bias and secondly, the person who is best able to answer particular questions will do so. A problem has occurred in the past, particularly on income questions where the wife has very often answered such questions incorrectly.

A number of papers were presented discussing the 1971 Census as applied to such disciplines as economics, education, sociology, political science and geography. A number of suggestions were made as to questionnaire content. For example, some felt that questions in the housing section should be eliminated and others substituted. Mr. Davy pointed out, however, that at this late date it would be difficult to make changes in the questionnaire.

In the fourth session, Dr. T. J. Vander Noot, formerly with the Economic Council of Canada and now with DBS, described the CANSIM system, its content, cost and method of updating. This is an integrated storage and retrieval system which will have as its content many, if not most, of the time series published by DBS.

Record linking of census data with local surveys and administrative records was also discussed. A number in attendance at the meeting felt the potentialities of record linking were so great that it should be developed.

This Data-Use Workshop proved useful because a number of people involved in research in the social sciences were made aware of enumeration data for the first time. It was also valuable to the extent that those attending became aware of the uses and limitations of enumeration area data in particular, and census data in general. Participants were also informed of some of the problems faced and solutions offered by the Dominion Bureau of Statistics.

*Information on the workshop was supplied by D. H. Sheppard, Supervisor, Market Research, Alberta Bureau of Statistics, Room 1529, Centennial Building, Edmonton.*

## Conference on Manpower Mobility Held at Cornell University

A conference on the mobility of highly trained manpower in the United States, Canada and Europe was convened at Cornell University, October 31 to November 2, 1968. A session on Data Sources was chaired by Dr. Sylvia Ostry, Director, Special Manpower Studies and Consultation, DBS.

Six papers were presented at this session of which five were devoted to discussion of the rich and varied sources of statistics on high level manpower, available in the United States. The impression left by these papers is that a veritable researcher's paradise exists in this area in the U.S. and, at other sessions at the conference, a number of substantive papers presented provided evidence that the information sources are beginning to be well exploited.

The Canadian Data situation, ably summarized in a paper by W.R. Dymond and K.V. Pankhurst of the Department of Manpower and Immigration, is, in contrast, characterized by a serious paucity of information although a start is being made to rectify this in a variety of ways. In the United States the original impetus to greatly expanded data collection in this field stemmed from the federal government's interest in science policy, particularly as it related to the utilization of manpower and expenditure of research and development funds in defence and space projects. In Canada, this impetus has, until now, been lacking.

At another of these sessions, Dr. Leroy O. Stone, Consultant on Demographic Research at DBS, presented a paper entitled "Vital Processes and Passage Time Parameters in the Cornell Mobility Model". The purpose of the paper was to review some of the major gaps in the discussion of a mathematical "model" for mobility analysis which has been developed by Robert McGinnis and his associates at Cornell, and to point up some avenues which might prove useful in filling these gaps. Requests for information about this paper should be directed to Dr. Stone at DBS.

## Market Research Handbook for 1969 To be Available in Late Summer

Following the four decennial censuses undertaken from 1931 onwards, four marketing data books were published by DBS. The change to the quinquennial census system in 1966 opened up the possibility of bringing out such a handbook every five years rather than every ten years as in the past. The first volume of this new five-year series, compiled by the Merchandising and Services Division, will be on sale in late summer. It is a new publication in more than one sense, the result of a critical reappraisal of scopes and objectives. In assessing the requirements of the new Handbook, the Merchandising and Services Division relied not only on other DBS divisions, but also contacted a number of market research consultants for opinions about the previous edition and for suggestions on possible improvements. From this mutual exchange of views, new principles emerged.

It was agreed, first and foremost, that the Handbook should not be based solely on data collected in the course of the latest census, but should also utilize the vast array of marketing information of gleaned by various DBS current surveys. Because of this, the new Handbook will incorporate both Census and current survey data. The inclusion of current survey data for 1967 and 1968 makes the new Market Research Handbook not only more complete but also more up-to-date because the time lag between the collection and publication of data is generally shorter for current surveys than for the census. The reader will be able to find, for example, 1968 data on various household facilities and equipment such as hot water supply, refrigerators and freezers, heating equipment, automatic dishwashers, and so on.

Another improvement on the previous edition is that instead of presenting the static picture of a certain year, the New Handbook will indicate trends by comparing data for different years. Depending on the importance and availability of data, many tables will show 1961 data side-by-side with comparable figures for 1966, 1967 and 1968. This sort of presentation is intended to help the market analyst in assessing the dynamic aspects of certain subject matter areas. The consumer acceptance of automatic dishwashers, for example, can be studied by comparing the 1961, 1966 and 1968 data.



The new Handbook is divided into two parts. The first summarizes available marketing statistics in about eighty tables, while the second half of the book is devoted to small area statistics related to countries, metropolitan and major urban areas, and cities and towns, with a population of 15,000 and over.

Special attention has also been given to the layout and format of the new publication. It is being printed with large type in two colours with more than 400 pages of text, tables, maps and graphs.

*The Market Research Handbook, (Catalogue No. 63-514 Occasional) will be available from the Queen's Printer or the Dominion Bureau of Statistics at a price of \$5.00 per copy. Further information can be obtained from Dr. Laszlo Sonkodi, Chief of the Wholesale Trade Section, Merchandising and Services Division, DBS, Ottawa.*

#### **Four New Studies Issued by DBS In 1961 Census Monograph Program**

Four new studies in the 1961 Census Monograph Series have been completed since the previous issue of the *Statistical Observer*. These are:

1. *The Female Worker in Canada* — Catalogue 99-553/1968-\$1.00. This 65-page study by Dr. Sylvia Ostry, Director, Special Manpower Studies and Consultation, DBS, reviews, insofar as data permit, the historical trends in the labour force activity of women over the course of this century. In particular, it focuses on the married women who have entered the labour market in increasing numbers in recent decades and whose activity, in this respect, is a matter of widespread interest both for economic as well as social and cultural reasons.

The study consists of three main sections. The first comprises an examination of the working life cycle of women in Canada — a profile of labour force membership by age and other demographic characteristics. The second part of the study considers the influence of other variables on the labour market behavior of women. The section compares the participation rates of women grouped according to selected characteristics such as their educational level, the income of their husbands, whether or not their husbands were fully employed over the year, and so on. In the third section, male-female earnings relativities, as revealed in the 1961 Census are presented.

2. *Working Life Tables of Canadian Males* — Catalogue 99-555 — 75¢. This study by Frank T. Denton formerly of DBS and now professor of economics at MacMaster University, and Dr. Sylvia Ostry, provides tables which show the life expectancy of males at any given age broken down into the expected number of years that they are likely to remain in the labour force and the expected number of years of retirement. Data is for the census years 1931 through to 1961 for Canada and for 1961 for the regions.

3. *Geographic Composition of the Canadian Labour Force* — Catalogue 99-554 — 75¢. In this, the last of the Monograph series of labour studies by Dr. Sylvia Ostry, differences between the provinces in respect to their labour force composition are examined and compared, taking into account the differing social, economic and industrial structures of the provinces.

4. *Incomes of Canadians* — Catalogue 99-544/1968 — \$3.00. This study by Jenny R. Podoluk, Co-ordinator, Consumer Finance Research, DBS, undertakes, in over 350 pages, to analyse various aspects of the income size distribution in Canada. Sources are published and unpublished data collected for the 1961 Census of Canada and the Surveys of Consumer Finances for selected years.

Income statistics have a multiplicity of uses. These, and the development of income statistics are discussed in Chapter 1, the Introduction. Since it is not possible to explore in a single volume all possible facets of income statistics, the study is restricted to a description of selected broad features of the Canadian income distribution.

The focus is on two series of income statistics: those of individuals, and those of family units. Following chapter 2, which is a summary, chapter 3 consists of an examination of the income distribution of the adult population — the sources of such income and the factors influencing such income. The most important source of income or the main determinant of income levels is income from employment, and chapter 4 examines labour force participation and the characteristics that affect the level of earnings such as occupation, age and education. Education is possibly the most significant variable that influences earnings and chapter 5 considers the relationship between private investment in education and the returns to education.

Many individuals in receipt of income are not heads of families but secondary contributors to family income, for example, working wives. The inter-relationships between individual incomes and family incomes are explored in chapter 6 and some of the characteristics of the family — income distribution and the family-income cycle are examined. The factors influencing regional differentials and both individual and family incomes are discussed in chapter 7.

The problem of poverty and its causes is a chronic one, even in Canada which has one of the highest income levels in the world. Chapter 8 discusses the statistical problems in defining poverty and focuses on those characteristics of the low-income population that may be attributes of poverty. It is well recognized that there is a strong correlation between age and low income and chapter 9 provides a detailed analysis of the incomes of the aged who constitute an important segment of the low-income population.

Chapters 10 and 11 are devoted to several special aspects of the income distribution: changes in the income distribution in the 1950s, income inequality in Canada and the role of government policy in re-distributing incomes. The appendices to the monograph include explanations of concepts and methodology, evaluation of censuses and survey data, and discuss the relationships and comparability of various official income series.

*Monograph studies can be ordered from The Queen's Printer, Ottawa, or obtained at Canadian Government Bookshops.*

#### **New Service Bulletin Published By Aviation Statistics Centre**

Quick release of timely statistics produced from surveys conducted by the Aviation Statistics Centre on behalf of the Department of Transport, the Canadian Transport Commission (Air Transport Committee) and the Dominion Bureau of Statistics is the aim of the recently introduced *Aviation Statistics Centre Service Bulletin*.

The service bulletin was introduced because inquiries received by the Aviation Statistics Centre indicated that, increasingly, statistical data heretofore compiled only for the use of the department of transport or the Canadian Transport Commission is needed for planning a wide variety of services directly related to airports and other air

service facilities. Inquiries indicate that such diverse users as urban planners, hotels, caterers, advertisers, aircraft manufacturers, aircraft services, and the air transport industry itself can benefit from release of summary information contained in the new service bulletin.

The service bulletin reports such matters as aircraft operating costs, specialty flying services, and aircraft movement statistics at various Canadian airports. Issues are intended to illustrate the type of information available, giving, if necessary, a short description of the source surveys and the major limitations of the data, together with statistical data of general interest. Later, historical tables will be provided on those subjects on which suitable series have been developed. Suggestions for topics of broad interest are most welcomed by the Aviation Statistics Centre.

*A subscription to the Aviation Statistics Centre Service Bulletin can be obtained from Miss I.J. Forgie, Aviation Statistics Centre, 12th floor, ConGill Building, 275 Slater St., Ottawa 4, Ontario.*

### **Quebec Bureau of Statistics Publishes First Annual Agricultural Data volume**

Agronomists, economists, manufacturers, farmers and all others interested in Quebec agriculture statistics for analytical or research purposes will want a copy of "Agricultural Statistics - 1968" a new publication of the Quebec Bureau of Statistics.

The publication will appear once a year and presents, in a single volume designed to complement bulletins issued periodically by the Quebec Bureau, comprehensive agricultural statistics originally published by DBS, the Quebec Bureau of Statistics, and data not previously published.

Information in the 280-page bilingual book is grouped under five headings: (1) General statistics, (2) Crops, (3) Livestock and animal products, (4) Processed farm products, and (5) Agricultural censuses.

*Agricultural statistics - 1968 is available for \$2.00 from the Quebec Official Publisher, Parliament Building, Quebec, Canada.*

### **Manitoba's Economy Described In New Provincial Publication**

Manitoba's basic resources, factors of production, and development are described in a 50-page report titled "The Economy of

the Province of Manitoba" issued by Manitoba's Department of Industry and Commerce. The publication will be particularly useful to businessmen who want an understanding of Manitoba's economy and of the basis for the province's growth and development. Descriptions of the sectors in Manitoba's economy will also interest students of business and economics.

Beginning with physical environment, the report goes on to describe human and natural resources, and then Manitoba's sectors of primary, secondary and tertiary industries. Several tables relating to economic development from 1960 to 1967 inclusive are included in the final section, as well as a number of other tables found throughout the report.

*The Economy of the Province of Manitoba* can be obtained from the Department of Industry and Commerce, Province of Manitoba, Legislative Building, Winnipeg.

### **Automotive Industry Facts and Figures Highlighted in Association Booklet**

Automotive industry facts and figures from various sources are collected and presented in a useful 40-page booklet issued each year by the Motor Vehicle Manufacturers' Association. Forty-seven statistical tables are assembled and prepared with the assistance of DBS, the provincial registrars of motor vehicles, R.L. Polk & Co. (Canada) Ltd., and the Automobile Manufacturers Association. These show: performance of the Canadian automotive manufacturing industry; exports and imports; retail trade; registrations; tax revenue from and tax rates on vehicles and motor fuel; motor fuel sales; street and highway expenditures and mileages; accident trends; and the most important automotive statistics from other countries. As well, there is a table showing automotive industry record achievements, a listing of provincial government motor vehicle administrators, and a list of automotive industry associations. Three pages are devoted to historical highlights of the Canadian Automotive industry.

In addition to the annual booklet a monthly report is prepared showing main monthly and year-to-date industry statistics. *Facts and Figures of the Automotive Industry - 1968 Edition* is available from the Motor Vehicle Manufacturers' Association, 25 Adelaide Street East, Toronto 1, Canada.

### **Report Predicts Admissions to Psychiatric Institutions**

Expectation of a person of given age and sex becoming an inpatient in a Canadian psychiatric facility sometime during their life is shown in a special analytical report published by the Health and Welfare Division of DBS. Expectations are based on first admission and mortality rates prevailing in 1965. No assumption is made as to what rates will actually prevail in future years, so that results of the report cannot be treated as projections.

Rates of admission to psychiatric institutions increase with age. On the other hand, the expectation of admission declines with age, because for some members of the population at risk, death intervenes. The expectancy measures quoted in the report are thus not simply measures of the risk of mental disturbance leading to admission as an inpatient to a Canadian psychiatric institution, but are measures of this risk *and* the risk of dying, these two components bearing an opposite relationship to the expectancy measure. No attempt has been made to provide the conditional expectancy measure, that is, the probability that a person of a specified age will be admitted to a psychiatric institution by a specified later age if he lives to that more advanced age. The answer to this question has been left for possible presentation in a second paper.

The 40-page bilingual publication shows expectancy measures by province, sex and for each year of age. Mental retardation is shown separately from all psychiatric diagnosis combined.

*Mental Health Statistics - the Expectation of Admission to a Canadian Psychiatric Institution, Catalogue 83-506 - 50¢ can be ordered from the Publications Distribution Unit, DBS, Ottawa. For information about method of calculation and input write to the Mental Health Section, DBS, Ottawa.*

### **Canadian Study of Smoking and Health**

If you want to continue enjoying cigarettes, you should not read "A Canadian Study of Smoking and Health". But if you want to examine the evidence for current concern about the smoking-health relationship, you will be interested in the 140-page report.



A Canadian Study of Smoking and Health is not a new report — it was issued in 1966 — but it is nevertheless still topical especially in view of the current upsurge of interest in this subject. Portions of the research done during the Canadian study were incorporated into the well-known U.S. Surgeon General's Report.

Purpose of the Canadian Study was to investigate the relationship between residence, occupation and smoking habits, and mortality from chronic diseases, particularly lung cancer. It was initiated by a questionnaire which was sent to Canadian Veteran Pension recipients during the period September 1955 through June 1962. Data from 78,000 men and 14,000 women, mostly widows, were analysed. The age of most of the men at the beginning of the study ranged from 30 to 90 years and the distribution was characterized by the ages of men eligible for service in the two world wars.

For each respondent dying between July 1, 1956 and June 30, 1962, the cause was related to information on his questionnaire about age, history of smoking habit, residence and occupation. Among the respondents during the six years of follow-up were 9,491 deaths of males, and 1,794 deaths of females.

For each group of smokers, the number of deaths that could have been expected if they had never smoked was calculated from the corresponding age specific death rates of non-smokers. This "expected" number of deaths was compared in two ways with the number of deaths actually observed. First, the number of "excess" deaths of smokers was determined by subtracting the "expected" number deaths from the observed number of deaths in the various groups of smokers. Secondly, the mortality ratio was determined by dividing the observed number of deaths by the "expected" number of deaths. This mortality ratio is essentially a comparison of age specific death rates of smokers and non-smokers; the higher the ratio, the greater the risk of death to individuals within a smoking category compared to the non-smokers.

Results are compiled in the report which is composed mainly of tables but contains also a full description of methodology.

*A Canadian Study of Smoking and Health is available from the Smoking and Health program Department of Health and Welfare, Tunney's Pasture, Ottawa, Canada.*

## Qualified Manpower in Ontario, 1961-1986

A summary of *Qualified Manpower in Ontario, 1961-1986*, Volume I, by Cicely Watson and Joseph Butorac, as mentioned in the previous *Statistical Observer*, has been issued by The Ontario Institute for Studies in Education. This 35-page synopsis can be read relatively quickly and will be appreciated by many who are interested in the subject but who do not require the detail contained in the original lengthy publication which is intended mainly for reference.

*4. Summary: Qualified Manpower in Ontario, 1961-1986*, Volume I, is available for one dollar. For a complete volume, contact The Ontario Institute for Studies in Education, 102 Bloor St. W., Toronto 5, Ontario.

## First Survey of Community Antenna Television Industry in Canada Released

The first report of an annual series on the community antenna television (CATV) industry in Canada has been published by the Transportation and Public Utilities Division of DBS. The report has been produced to present industry — wide statistics on an important and rapidly expanding segment of the communications field.

Information in the report is based on questionnaires mailed to all Canadian CATV Companies. The publication includes information on wireline facilities, subscribers and employee statistics by area, operating revenue and expenses by area and revenue group, and income account, surplus account and a statement of assets, liabilities and net worth.

A community antenna television station is defined as a system for receiving signals from broadcasting stations and distributing them by cable to subscribers.

*Inquiries should be directed to Mr. J.R. Slattery, Transportation and Public Utilities Division, DBS, Ottawa.*

## Glossary of Broadcasting Terminology

A glossary of broadcasting terminology is included in "Radio and Television Broadcasting, 1967, DBS Catalogue No. 56-204". The glossary was developed by the DBS National Advisory Committee on Broadcasting Statistics to provide those interested in

broadcasting with a basic knowledge of the vocabulary used in the industry as well as definitions of some of the words and phrases which are often incomprehensible or confusing to those outside the broadcasting field. It is planned to publish the glossary at 5-year intervals.



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