Industrial Classification Systems for National
Economic Accounting--Are Services a Problem?*

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Introduction

The formation and continued existence of the Voorburg Group on
Service Statistics is clear evidence of the worldwide interest in
services-producing activities. This interest has focused the atten-
tion of statisticians and economists on issues such as the avail-
ability of service statistics, the conceptual basis for the measure-
ment of prices and output of services, and the treatment of services
in industry and product classification systems. This paper addresses
the third of these issues from the perspective of a national income
accountant concerned with the preparation of national income and
product (NIP) and input-output (I-O) accounts of the United States.
This perspective is influenced by the recent revision of the U.S.
Standard Industrial Classification (SIC) system, the proposed Central
Product Classification (CPS) system, and the work of the Voorburg
Group.

The major conclusions of the paper are as follows. First, that
improvements in service statistics require expanded collection of
certain types of data for all industries, and that the availability
of these data by 4-digit SIC industry should satisfy all users,

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the U.S. Department of Commerce.

regardless of the structure of the SIC. Second, the structure of the SIC has a significant effect on the quality of the NIP and I-0 accounts because this type of data can only be obtained infrequently. When these data are not available, the quality of the accounts can be reduced because of the structure of SIC.

The next section provides some background information on the availability of economic statistics in the United States, and describes the needs of the NIP and I-0 accounts as they relate to industry and product classification systems. The second section provides the rationale for the conclusions summarized above.

Classification needs of NIP and I-0 accounts

In the U.S. statistical system, the establishment, or physical location, is the focal point of the collection of most types of economic statistics. The establishment is the smallest business unit for which data on both outputs and inputs usually are available. Receipts by type of product also are available at the establishment level, but the underlying business accounting records do not provide information on the corresponding inputs.

Detailed statistics for each 4-digit SIC industry, including some detail on product receipts, are collected in economic censuses conducted every fifth year. For intercensal periods, annual sample surveys provide limited industry and/or product detail; more frequent collection is not feasible primarily because of cost and respondent burden. For manufacturing, annual statistics are available for each

4-digit SIC industry, and receipts by type of product are available but at less detail than in the census. For other industries, the statistics are limited to total receipts at the 2- or 3-digit SIC industry level.

The U.S. NIP and I-0 accounts are prepared in a parallel manner. Benchmark I-0 tables, based primarily on the commodity-flow method and the information collected in the economic censuses, are prepared every 5 years; the tables also provide the benchmarks for the expenditures components of the NIP accounts. Annual I-0 tables are prepared based on the annual survey data, using the commodity-flow method and I-0 relationships from the latest benchmark table. Because they are available only with a long but slowly shrinking lag, annual I-0 tables are not used for the current annual NIP account estimates. The annual NIP account estimates of components benchmarked to the I-0 tables are prepared by extrapolating the latest benchmark I-0 estimate with series based on abbreviated commodity-flow methods or using establishment industry total receipts data, some of which are available only at the 2- or 3-digit SIC industry level. (For some components, the annual I-0 estimates are incorporated later into the NIP accounts.)

With this type of integrated I-0/NIP account system, the SIC system affects both sets of estimates. The effects of the SIC system are important and relate not only to the list of detailed SIC industries but also the structure and definitions of the industry divisions

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within the SIC. The present SIC is in general structured in a manner that fits in with the commodity-flow method. It distinguishes between the production of goods and services and between the purchases of goods and services by persons and by others. To the extent that the SIC reflects the considerations listed below, the quality of I-0/NIP account estimates also are enhanced.

(a) For producers of capital equipment, separate 4-digit industries are needed. These 4-digit industries also should be grouped into separate 2- and 3-digit industries. In addition, product classifications for these industries should distinguish between equipment and parts.

(b) For products sold primarily to persons, separate 4-digit industries are needed in manufacturing, wholesale and retail trade, and services. These 4-digit industries also should be grouped into separate 2- and 3-digit industries.

(c) All builders should be included in construction, and the construction SIC industries should distinguish between residential and nonresidential construction and between new construction and maintenance and repair construction.

(d) For both wholesale and retail trade, sufficient 4-digit SIC industry detail is needed to reflect variations in margins among products.

(e) For finance, industry definitions should take into account legal arrangements in the economy so that the establishment industry

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data will be consistent with the financial-type statistics available from government administrative reports, which are organized in this manner.

(f) In general, industry definitions should combine establishments that use the same types of capital equipment. For example, a separate "courier services" industry should not be established because it would include such services provided by airlines, railroads, and trucking firms.

(g) In general, industries at the 2-, 3-, and 4-digit levels should be defined so that their input structure is likely to remain stable in the forseeable future.

Conclusions

This section provides a more complete discussion of the conclusions summarized at the beginning of this paper.

1. <u>Service industries and the structure of the SIC</u>.--Despite the recent expansion of number of 4-digit SIC industries for services, more expansion is likely needed to keep pace with the growth in services. The need for additional expansion can best be monitored by paying more attention to employment as a criterion for identifying 4-digit SIC industries. Not only is employment a good measure of economic importance, but also it is available on an up-to-date basis. With few exceptions, however, this expansion can be handled within the existing structure of the SIC. In the preparation of the recently revised SIC, little evidence was presented to show that the structure

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of the system was in need of a major overhaul--e.g., that changes were needed in the definition of manufacturing. The treatment of publishing, i.e., as a service or as a manufacturing industry, was discussed and good arguments were offered on both sides of the debate. However, attempts to put all "publishing type" activities of any kind into a single 1- or 2-digit industry of the classification should be resisted. There seems to be little justification for combining diverse products or activities, such as books, records, and computerized data bases, into a single industry. Two other examples where changes were discussed but rejected were to create separate industries for energy and tourism. Although data on these activities are needed, they should be estimated independent of the SIC system. The problem of estimating the amount of hotel receipts paid by foreigners or by resident tourists cannot be resolved by changing the SIC.

2. Product classification system.--A product classification system covering all products should be developed within the framework of the SIC. Such a system, could improve the availability of receipts detail and would improve the definitions of the 4-digit industries. A system, such as the CPC, that is not consistent with the corresponding SIC, would be very difficult to implement. On the other hand, the availability of the types of data listed below in item 4 would allow users to combine product receipts as they may choose.

3. Classification systems and the quality of NIP and I-0 accounts. --The availability of the information described in item 4 at the 4-digit SIC level would provide the data needed for both NIP and I-0

accounts. If these data were available annually, then it is not likely that the quality of the accounts would be affected by the structure of the SIC. Unfortunately, in the United States, they would be available only in census years--once every fifth year. Thus, a second consideration for the quality of the NIP and I-0 accounts is whether receipts aggregated by SIC industry provides suitable extrapolators. For the NIP accounts, this means 2- or 3-digit industries would have to be defined to focus on products sold to consumers and on capital equipment sold to businesses. For the I-0 accounts, this also means that industries at all levels would have to be defined so that their input structure is not likely to change. These considerations recognize the fact that annual data needed to extrapolate consumer spending or business investment frequently are not available at the 4-digit level and that detail on purchased inputs are not available.

4. Improved service statistics.--The most effective means of improving service statistics is to expand the content of the economic census for all industries to include specific types of detail that would allow users to aggregate the data to satisfy particular needs. The needed detail includes the following: Receipts by type of product and by class of customer; force-account construction, transportation, and utility activities; purchased services by type; legal form of organization, including nonprofit; and type of operation--e.g., contract manufacturing, manufacturers' sales branch, franchise, and

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foreign ownership. This information, for each 4-digit SIC industry would provide the data for virtually any need, without restructuring the SIC.

This paper has focussed attention on the effects of industrial classification systems on the preparation of the NIP and I-O accounts in the United States, with particular concern about proposed changes in these systems related to the need for improved service statistics. It has asserted that expanded data collection is the best way to improve the quality of these accounts and the quality of service statistics.