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COMMODITY CLASSIFICATION IN THE NATIONAL ACCOUNTS OF NORWAY

Application of CPA in the national accounts

by

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1 THE NORWEGIAN NATIONAL ACCOUNTING SYSTEM

The Norwegian national accounting system is built up by the production approach. The main purpose is, on the one hand, to show the domestic product at market prices by industry of origin and, on the other hand, to show a detailed breakdown by categories of expenditure. The main part of the system consists of an input/output matrix (make/use tables) of about 182 industries, 1750 commodities (goods and services) and 216 final demand sectors.

The following important characteristics of the Norwegian system of national accounts may be mentioned:

(a) the integration of annual I-O tables in the national accounts,
(b) the strong emphasis on commodity flows and commodity balances,
(c) the incorporation of detailed specifications,
(d) the main emphasis on production, consumption expenditure and capital formation accounts,
(e) the introduction of the entire SNA matrix as an accounting framework, and
(f) the role of the national accounts as a basis for integrating and co-ordinating economic statistics as a whole.

In Norway I-O tables have been integrated in the national accounts ever since 1952. Characteristics like integrated I-O tables and the emphasis on commodity flows are closely related to another specific characteristic of the accounts: the detailed degree of specification.

The background for this wealth of details may primarily be found in the primary statistics available, i.e. for goods producing industries and external trade, and the tradition of building large macro economic models in Norway. Based on the commodity nomenclature used in industrial statistics and external trade statistics, it has been possible to integrate a detailed set of commodity flows in the national accounts. The heavy emphasis on commodity flows and commodity balances has a positive effect on the consistency in the accounts, including the constant price estimates. In fact, the commodity flows of the input/output tables at constant and current prices constitute the core of the national accounting, integrated in both the preliminary and final accounts. The basic tables are rectangular, sector x commodity (make matrix) and commodity x sector (use matrix).

Traditionally the primary statistics for goods producing industries have been designed for the national accounts,while the statistics for services have been less developed. The national accounts play a key role of coordinating and integrating all economic statistics in Norway, inter alia, by using joint definitions and classifications.

2 REVISION OF THE NATIONAL ACCOUNTS

The last revision of the Norwegian national accounts (NA) was carried out during the years 1968-1972 and the revised figures were published in 1973 (adoption of SNA 1968).

Since then new primary statistics, in particular for internal trade and the service industries, have been established. The new statistics include bench mark statistics as well as yearly and short term statistics.

The current revision of the national accounts started this year. Revised figures will be published in 1994. An important part of this revision will be to implement new international standards, i.e. the UN Revised System of National Accounts, the industry classification NACE/Rev.1 and the commodity (product) classification CPA.

3 CLASSIFICATION BY KIND OF ECONOMIC ACTIVITY

In the national accounts, the production sectors are, for the time being, classified according to kind of economic activity based on the Norwegian Standard Industrial Classification (NSIC) which corresponds closely to United Nations International Standard Industrial Classification of All Economic Activities (ISIC, Rev.2). Down to the 4-digit level which is the most detailed level employed by ISIC, the NSIC follows, with very few exceptions, the classification employed by the ISIC, whereas the subgroup (5-digit level) is a national level.

From 1992/93 CBS implemented NACE/Rev.1 in the Establishment and Enterprise Register (EER). This will expand the number of levels for services substantially, compared with the old classification based on ISIC/Rev.2. Nace/Rev.1 will also became the activity classification in all economic statistics.

The industrial classification in the national accounts (NA) will not follow the most detailed classification in the primary statistics (and the EER).

As a general rule, the new NA industrial classification, will be aggregated from level 3 of NACE/Rev.1. Thus in the NA the new industrial classification aggregated will correspond to level 2 of NACE/Rev.1.

4 THE COMMODITY CLASSIFICATION IN THE NATIONAL ACCOUNTS

The commodity classification used in the national accounts was first established in the 1960's. As refers the goods, the commodity classification was based on the BTN (Brussels Trade Nomenclature). The reason for this was that both our external trade statistics and our manufacturing statistics were based on this nomenclature. The commodity classifications in the external trade and mining and manufacturing statistics have been revised several times according to new versions of the customs nomenclature (BTN-CCCN-HS).

As refers the services, the specification by commodity in the NA is very poor, due to lack of specification in the primary statistics. Only some of these activities are covered by primary statistics giving only total production by activity with no specification on products. The specification of services in the NA are more or less based on the detailed industrial classification in the basic statistics (i.e. 5-digit level) assuming production of non-characteristic commodities to be negligible. As some services are obliged to pay value added tax (e.g. transport of goods) and others not, emphasis has been put on splitting the commodities according to the VAT rules.

The commodity accounts in the NA distinguish about 1750 different groups of goods and services (commodities). Of these about 1350 refer to the commodities in goods producing industries and the rest for services. The commodities (or - groups) in the national accounts are defined as aggregates of the commodity classifications in the basic economic statistics, i.e. for external trade it will be based on the customs tariff (HS).

The commodity accounts register the supply of each commodity from three different classes of production accounts (central government including social insurance administration, local government and industries). Between 5 and 10 per cent of the total supply is however recorded outside the commodity accounts. The most important item of this part is gross output (the larger part of it, i.e. government consumption expenditure) in general government, which is recorded as sector deliveries directly from the production accounts for general government to the consumption accounts for general government. Another important item is direct purchases by non-residents in the domestic market. Finally, the non-commodity items include deliveries for purchases/sales of existing real capital.

Besides supply of commodities from nearly 190 production sectors and 21 import sectors, there are also included items which relate to special distribution accounts. The special distribution accounts which are entered adherent to the production accounts, receive a great number of commodities, aggregate them and then distribute them to various uses as composed commodities.

Introduction of the distribution accounts is due to the lack of commodity specifications of intermediate consumption and gross capital formation in the primary statistics.

5 INTRODUCTION OF NEW PRODUCT (COMMODITY) CLASSIFICATION IN THE NATIONAL ACCOUNTS

Since the 1960's the commodity classification in the NA has been only slightly modified taking care of new important commodities and change in the tax rules for commodities (i.e. value added tax established in Norway from 1970 onwards). However, due to main revisions and changes in the classification of commodities in the primary statistics since the 1960's, we do not have a NA classification any more that fit the primary statistics on all fields. These problems were revealed particularly when the external trade and industrial statistics for 1988 adopted the HS. Some commodities in the primary statistics now correspond to more than one NA commodity. This means that we have to estimate how to distribute between the NA commodities involved.

As part of the main revision of the national accounts, the commodity classification in the national accounts is revised. Another important reason for this revision was, of course, that the NA commodity list was old fashioned, i.e. specified some commodities that were of minor importance and did not specify some commodities of major importance.

In contrary to the 1960's, international commodity classifications for general use, does exist now. Two standards are of particular interest in this respect - the UN classification Central Product Classification (CPC) and the EROSTAT classification of Products by Activity (CPA).

After studying the two standards and their relations to other standards we decided to use CPA as basis for the new NA classification. The major factors behind this choice were:

(i) NACE/Rev.1 will be the new activity classification and CPA is linked to this classification.
(ii) We are used to a coding system were the main producer (industry) is identified through the commodity coding system.
(iii) We have the impression that more emphasis has been put on establishing a link to the main producer in the CPA than in the CPC.
(iv) CPA will be important for the EER as a tool for identifying the industry of the establishment.
(v) Our industrial statistics will revise the goods classification, based on HS (partly aggregated), to be able to report this statistics according to PRODCOM-list. This list is specifications of the CPA goods.

In our national accounts revision, the process of establishing the new commodity classification has just started. A lot of practical problems are expected to be revealed during the work.

The work so far has resulted in a preliminary draft list of commodities covering all activities excluding building and construction and internal trade. Concerning building and construction our NA specification by product traditionally have been based on type of end use, e.g. non-residential buildings in agriculture, forestry and fishing. This treatment is due to lack of specifications on the supply side (i.e. poor statistics on output from the building and construction activities). On the other hand we do have statistics on gross fixed capital formation by type of capital by user. Thus the CPA means a challenge to our building and construction statistics. The forms have to be changed in order to give the necessary specifications. The problems to be sorted out do not refer to values only. It is also important that the price statistics correspond to these CPA product specifications. As it will take some time to change the primary statistics, we do have to retain the specification by type of end use in the short run.

Concerning retail trade and wholesale trade (RWT) traditionally the same commodity specification as for the goods producing industries has been used. RWT is only one sector in our NA, i.e. it is not even a distinction between retail trade and wholesale trade. The activity of this NA-sector consists mainly of buying commodities and selling these commodities in the same condition as purchased. The RWT-production in our NA consists mainly of the trade margins specified by commodity. Introducing a commodity classification for RWT based on the CPA may mean a considerable change in our procedures. We do not, for the time being, see any benefit of introducing the CPA commodities for wholesale and retail trade. Our yearly primary statistics specify turnover by industry without giving trade margins or specification by commodity. However, we do have a benchmark study from 1985/86 giving these specifications. These figures are partly dubious, and follow a commodity specification that are partly not consistent with the classification in our national accounts. Since the statistics for wholesale and retail trade are poor, we do not intend to give priority to the treatment of this sector in the revision of our NA.

We are now in the process of identifying the corresponding values of the commodity flows. We do not intend to establish separate commodities when the values are small or zero. Thus we are in the process of discussing thresholds for the values and principles of including such items, i.e. how to aggregate from CPA to a separate NA-product. As part of this work we will consider to give priority to specific needs by major users.

We will also put emphasis on the same four main principles as we traditionally have used for the commodity classification in the NA. The commodity classification should, as far as possible, be constructed to accommodate the requirements that the commodity should be "price-homogenous", should be delivered to one and only one category of end use, and the different goods and services within a commodity should have the same trade margin and be subjected to the same excise taxes (or tax rates).

5.1 The coding system

The new industrial classification in our NA will be identified by a 3-digit code. This code will correspond directly (1-1) to NACE/Rev.1 only on the 2-digit level, which means that principal changes in the CPA would have to be made if we want to establish a coding system with the NA industrial sector code as the first part of the product code. However, we cannot see that such a work will give any net gain. We see more benefit in establishing codes that correspond more directly to CPA and PRODCOM-list.

We are now in the process of establishing NA products that correspond directly to CPA (identical codes) on the 5-digit level. If codes on the 5-digit level do not correspond to CPA 5-digit level a zero (i.e. 0) as digit 5 is used. A separate 6-digit number for specific national purposes is established. The NA code on the most detailed level (6) may, of course, sometimes be the same as CPA on this level, this does not necessary mean that it is the same product. However, we try not to use the same 6-digit code as the CPA if it is not the same commodity. This coding will depend on the availability of proper codes not in use by CPA.

5.2 The number of NA-products

The intention is to reduce the number of goods and increase the number of services as the service sectors play a more important part of the economy than in the 1960's. The aim is to kep the number of products under 200.

Contrary to our present procedures, we intend to use the same commodity specification in the preliminary national accounts as in the final accounts.

The CPA specifies about 930 products on the 5-digit level and about 2300 on the 6-digit level. Excluding typical retail- and wholesale trade products from this, the figures are about 840 and 2100 respectively.

5.3 Goods

One problem is that the industrial statistics (goods producing) as well as the external trade statistics are based on the HS without any further breakdown according to the CN. In general, however, this is not a problem since the CPA in most cases are aggregated directly from the HS.

In general the Norwegian manufacturing establishments do not have specialized production, i.e. the processing from the raw material to the product produced for final consumption is within the same establishment. Thus some CPA commodities ("internal products") may not be products in the NA.

5.4 Services

The work of examining the CPA classification for services has just started. Our experience so far, however, is that the CPA is very ambitious with regard to services. In this respect it seems as if the CPA is prepared for a future development on service statistics. The new activity and commodity classification will obviously require a lot more detailed data for services than is available today.

For services no product classification has been used in the primary statistics in Norway. As extended use of register statistics seems to be the trend, this will probably also be the situation in the future. From the statistical material we have available, today we are aiming at a product specification at a 5-digit CPA level as a target. We think, however, that it will be difficult to achieve this. Another future target will be better price information on service industries.

5.5 Relation between the CPA and the CPC classification for business services.

The CPA and the CPC classifications for business services are very much alike. To a large extent it is a one to one correspondence. However, there are some small differences in the productspecifications. For example, the CPA divisions 72 (Computer Related Services) and 74 (Other Business Services) are slightly different with regard to the specifications, while the division 73 (Research and Development) shows a one to one relationship.

As mentioned earlier we have chosen to use the 5-digit CPA as a framework for our productspecification. On some areas we will not be able to achieve that level, while on others we will chose to go down to a 6-digit level. For the CPA division 73 (Research and Development Services) there is a one to one relationship between the 5-digit CPA, which contains two products, and the 3-digit CPC level. For this division we might want to go down to a 6-digit level, on which there is a one to one correspondence to 5-digit CPC.

Division 72 (Computer and Related Services) we have split into 9 5-digit CPA products. These products do not correspond to CPC which contains only 6 products on the 3-digit level in this division. However if we go down to the 6-digit CPA we find that these products are almost identical to the 5-digit CPC. On this level we can chose among 17 CPA and 14 CPC products, indicating that CPA is a bit more detailed. For this division we will probably not want to go down to the 6-digit products. Lack of statistical material will perhaps force us to chose a even more aggregated level than the 5-digit.

Division 74 (Other Business Services) we have split into 28 5-digit CPA products. ~~Neither~~ For this division there is no one to one correspondence between the 5-digit CPA and the 3-digit CPC (which contains 14 products on this level). Also for this division, however, the 6-digit CPA and the 5-digit CPC correspond

reasonably good. The differences are due to a bit more detailed CPA spesification on 74111(Legal Services)and 74141(Business and Management Consultancy Services) and a bit more detailed CPC spesification on 74123(Tax Consultancy Services). There is however no problems in identifying CPC products as CPA products. The statistical material available for this division today will not make it possible for us to go down to a 6-digit level. We will rather be forced to use a more aggregated level than put out in the framework.

Generally it can be said that even if we have chosen CPA and the 5-digit level as a framework for our productspecification, we are open to chose CPC products where we find them more suitable. We may also have to make our own products when national conditions reguire that.

6 STATISTICAL CLASSIFICATION OF COMMODITIES IN THE PRIMARY STATISTICS

In order to get consistent figures transferred from the basic economic statistics to the national accounts, it is of utmost importance that the commodity classifications in the different types of basic economic statistics are consistent. In Norway, the different economic statistics for industries are all, by rule, based on or linked to the customs tariff.

The most detailed commodity specifications, have been established for the price statistics surveys , i.e. for the collection of prices on specimen products for the system of producers' prices and consumer price statistics. These specimen products are breakdowns of the HS 6-digit level and/or the Norwegian customs tariff at the most detailed level.

The quality of industrial statistics, i.e. manufacturing and mining, have been reduced the last years.

6.1 Statistical classification of commodities in the Norwegian external trade statistics

The external trade statistics form integrating parts of the national and international statistical systems. Accordingly, internationally adopted definitions, as well as standards of commodity and country classifications, are of great importance.

The most detailed international UN-standard of commodity classification is the customs nomenclature HS - The Harmonized Commodity Description and Coding System.

The HS codes at the most detailed level, i. e. the 6-digit codes, are in Norway expanded to a customs tariff with two digits for the more specific national purposes; one for customs purposes and one for statistical purposes.

The Norwegian commodity list valid from 1990, specifies about 6400 commodities by these eight digits codes.

6.2 Statistical classification of commodities in the Norwegian industrial statistics

Many countries have adopted the HS in their trade statistics, while only few countries, like Norway, use the HS in their yearly production statistics for mining and manufacturing.

In the yearly industrial statistics, the commodity specifications for production often correspond to the HS 6-digit level. Some commodities may correspond to the 4-digit level only, while others may be a breakdown of the customs tariff at the most detailed level. The manufacturing statistics nomenclature contains 3700 commodities. The commodity classification for the intermediate consumption of selected industries (benchmark), are more aggregated than the production, i.e it corresponds often to the HS 4-digit level.

The commodity classification for the monthly production index is more or less based on the same specifications as the yearly industrial statistics.

The commodity classification of production in the industrial statistics is now being revised. The number of specifications will be increased , i.e. the classification will be changed to be able to give the same specifications as the European Economic Community's commodity classification for industrial production, i.e. the PRODCOM-list. The revision of the commodity classification in our industrial statistics should be finished in due time to be established for the first time in the (yearly) manufacturing statistics for 1995.