

Norwegian national accounts

Status in terms of quality and contents after the introduction of new international standards and the latest general revision

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Following the introduction of the new international standards of national accounts and the completion of the general revision of national accounts in 1995 - 1997, the quality as well as the contents of the Norwegian national accounts have been increased and extended. The EU Commission recently concluded that the Norwegian national accounts are of a high quality, soundly based on reliable and exhaustive sources, integrated in a system with a detailed product breakdown. A study by the United Nations on national accounts of nearly 200 countries, suggests that we are among the better-off countries. The EEA treaty sets specific requirements to the Norwegian national accounts, i.e. all EEA-countries are committed to adopt the international standard of ESA 1995 in the context of reporting such figures from 1999 onwards. Norway was the first country to implement ESA 1995; for us the challenges in the years to come are rather to improve the underlying basic statistics than to eliminate further gaps in the national accounts as such.

Introduction

This article evaluates the Norwegian national accounts following the publication of revised national accounts by Statistics Norway for the 20 year period of 1978-1997. It has been initiated from the evaluation of the Norwegian national accounts recently carried out by Eurostat (the Statistical Office of the European Communities) / EU Commission. This is part of a project - included in the statistical co-operation work laid down in the EEA treaty - to secure a high quality to the ESA-based national accounts estimates. In addition, a United Nations study of nearly 200 countries is referred to, trying to categorize separate levels in the development of the national accounts. The last part of the article gives a structured summary on the status of the various parts of the Norwegian national accounts, with the latest accomplishments and plans for further improvements in the years to come.

Basically, the principles adopted in the present Norwegian national accounts are those reflected in the new international standards of national accounts – SNA (System of National Accounts) 1993 and ESA (European System of Accounts) 1995. SNA 1993 has the widest scope of the two, including also satellite accounts, while ESA 1995 on the other hand is designed more precisely towards the explicit uses of the developed countries. The two standards have common definitions, but differences in presentation means that they complement each other as guidance to national accounting.

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Evaluation of the Norwegian national accounts by EU/Eurostat

Reporting, documentation and evaluation

EU Commission and Eurostat aim at securing the quality of the national accounts estimates that are regularly reported by the National Statistical Institutes (Statistics Norway among them). One effort has been to demand strong requirements for the documentation of gross domestic product (GDP) and gross national income (GNI), the latter also named GNP after the old terminology. Member States already at the end of the 1980s were asked to initiate this kind of work. In a so-called «Inventory» for the GDP-/GNI-calculations, each country was supposed to document and illustrate their calculations in a detailed way.

For Norway, the Inventory documentation was completed in the Spring 1996. Shortly after having submitted the final report to Eurostat, it was published by Statistics Norway in the series Documents, see Fløttum (1996a) og 1996b).

The procedure for treatment of the country Inventory reports has been through the presentation and discussion of summary evaluation reports - written by Eurostat (EU Commission) - for the GNP Management Committee in Eurostat. In these reports, the compilation and methods used for the calculation of GDP and GNI at current prices of the respective countries are evaluated. Normally, EU Commission as a consequence of the evaluation stipulates certain reservations to the estimates, in areas that are not sufficiently satisfactory and need improvements. Bilaterally, a plan for improving the present calculations is drawn up for each country involved so as to make it possible to lift the reservations as soon as warranted. The reservations are three-

fold: some are specific to the country, some are transversal, and some are aimed at improving exhaustiveness. There are also specific proposals made for a better and more standardized treatment in particular and difficult areas, such as the treatment of production in construction and wholesale and retail trade.

Evaluation of the quality of the Norwegian national accounts made by Eurostat

Eurostat completed the evaluation report on the Norwegian GDP and GNI calculations in November 1997, and the report was discussed one month later. The evaluation report is relatively short, while at the same time highly positive, see Eurostat (1997). The Commission did not find it appropriate to stipulate any specific reservations for Norway. The transversal cases and the efforts for improved exhaustiveness are however relevant also for Norway, committed as we are to the EEA treaty.

The report starts with a general description of the national accounts in Norway, on the use of the different approaches - the production or output method, the expenditure method and the income method - which are all used to determine

GDP, integrated in detailed supply and use tables (input-output framework). Then the transition from GDP to GNI is described, and the transversal cases, as well as a presentation of the main results from our general revision and implementation of ESA 1995, as the first country in Europe. Throughout the report, Eurostat refers to strong as well as weak parts of the calculations, although the evaluation is mainly summarized in the concluding remarks at the end.

The conclusions start with reference to our strong traditions in production statistics and use of the input-output framework (see box, note 1). Our recent attention in improving on the service activities has been appreciated (note 2). Although estimates related to services can still be regarded as weaker than those related to goods, Eurostat finds that many adjustments have been made to improve exhaustiveness (note 3). Adjustments for hidden activities are however pending on two reports still in progress (note 4). The report mentions some minor issues where Norway could improve (note 5). One such area is changes in inventories. We have ourselves considered this to be a vulnerable area, in calculations which we find hard to verify from just fragmentary information at our disposal. Issues concerning specific features have been introduced, but need more atten-

Conclusions on quality evaluation of the Norwegian national accounts made by EU/Eurostat

- 1) "The Norwegian National Accounts have always been very much focused on the real economy, i.e. the flows of goods. This is evidenced by the high quality of manufacturing statistics, oil and gas activity statistics and transport statistics. Also, the importance of the commodity flow method (and the early introduction of supply and use tables) can be explained from this background."
- 2) "Of course, the focus now had to change in the direction of services. This changing attention can be seen from the increasing coverage of service activities in the Register and the development of new sources such as business service statistics and surveys on trade margins. Also, it is shown clearly in the large increases in output, value added and gross fixed capital formation of services industries in the general revision of 1995."
- 3) "Nevertheless, the estimates related to services can still be regarded as weaker than those related to goods, in particular regarding exhaustiveness. This does not mean that GNP of Norway will be grossly underestimated. On the contrary, many adjustments to improve exhaustiveness in all parts of the system are made, and the detailed balancing procedure provides a valuable check on the estimates."
- 4) "Although no explicit adjustments for hidden activities are made, it cannot be expected that this would affect GNP to a large extent. A definitive view on the exhaustiveness of Norwegian GNP can only be given after study of the yet to be received reports on the validation of employment underlying GNP and the use of fiscal audit data."
- 5) "This report mentions some minor issues where Norway could improve. This concerns a few estimates, such as intermediate consumption of the trade industry, changes in inventories and tips."
- 6) "Other issues concern specific features of ESA95 which are yet to be developed, such as valuables and intangible assets."
- 7) "Furthermore, in the section on transversal themes some issues are mentioned where either Eurostat does not yet have full information or the treatment can possibly be improved. This concerns for example the treatment of undertakings for collective investment, the threshold for durable goods of small value, some issues on financial institutions, the treatment of government and private non-profit institutions and the calculation of imputed rents on owner-occupied dwellings."
- 8) "As far as the system of accounts is concerned, the use of the income approach can be improved. A full integration of the institutional sector accounts would strengthen the system."
- 9) "As said, these are all minor issues of which only a small impact on GNP can be expected. Overall, the Norwegian National Accounts are of a high quality, soundly based on reliable and exhaustive sources, integrated in a system with a detailed product breakdown."

tion in further steps (note 6), a strategy to which we also agree. There are minor points in the transversal themes that claim attention as well (note 7). Although all three approaches are utilized to calculate GDP, the production approach and the expenditure approach are the ones which mainly set the tone. On the third approach – the income approach – the reports says it can be improved and that a full integration of the institutional accounts would strengthen the system (note 8), with which we fully agree.

In the last paragraph, the main conclusion is given (note 9), already referred to in the beginning.

Evaluation of the national accounts by United Nations

United Nations' scheme for evaluating status

United Nations Statistics Division (UNSD) has prepared an appropriate tool for monitoring progress in the implementation of SNA 1993. This is presented in a background document for the UN Statistical Commission on milestone assessment of Member States. It includes a scheme or description on the methodology to arrive at a country milestone assessment, based on the UNSD (and OECD) database of national accounts. From this database, 26 key tables with data for the period 1990-1995 have been selected as relevant for the milestones. All 184 Member States are analysed and assigned a level from 1 to 6 depending on which milestone level a country has passed; or level 0 if no data are available, see United Nations (1997).

One problem with this approach has been under-reporting of national accounts information to UNSD. Some countries have elaborated more tables for their own publications than they report in the UNSD questionnaire. This even affected Norway. In the Norwegian case, the international questionnaire used for reporting was not yet adapted to a new situation that involved publishing national accounts estimates according to the new system. During an interim period until a revised questionnaire for the new system is developed and adopted, Statistics Norway did not put high priority to preparing revised detailed data of the new system to be reported in the format of the former questionnaire. As a consequence, a lower milestone level was assigned for Norway, than otherwise would have been in accordance with the actual situation.

Traditionally, we have considered the national accounts to consist of two main parts: the central framework on the real economy, and the institutional sector accounts. Experiences in Norway and other countries have shown that the institutional sector accounts need more time to be developed and implemented than is the case with the key figures of the central framework on the real economy. This fact is also reflected in the milestone assessment of the UN analytical scheme.

Milestone assessment in national accounts by countries

Globally, as many as 56 countries have not yet reached milestone level 1. These countries represent however just 7 per cent of the world population and contribute with 1.5 per cent to estimated world GDP. Approximately half of these countries are African, but also lilliputian States in Europe belong to this group and some of the Balkan States.

A requirement for milestone 1 are two sets of GDP tables, one by industry and one by final use, both at current and constant prices. Milestone 2 requires, in addition, main aggregates of the total economy and balance of payments data (both current and capital account). In the combined group of milestones 1 and 2 there are 101 countries, i.e. more than half of all countries. Nonetheless, they represent only one sixth of estimated world GDP. In a majority of the 9 UN Regions - when measured by GDP - this is the most typical milestone assessment found to characterize the status of national accounts today, i.e. in the 5 regions of Africa, Caribbean and Latin America, Western Asia, Eastern Europe and the Former USSR. Without Japan, the list would also have included Eastern, Southeastern and Southern Asia.

Above this level, there are only 27 countries remaining, but they represent one third of world population and as much as 82 per cent of estimated world GDP. Milestones 3 and 4 include 16 countries, while 11 countries are specially well-off at milestones 5 and 6. Additional requirements for milestone 3 are tables on general government and some tables on corporations and households. The borderline to milestone 4 is somewhat vague, but may involve more tables on corporations and households.

Norway is assessed for milestone 3 together with - inter alia - Austria, Iceland and Ireland, while countries like Belgium, Denmark, Italy, Spain and United Kingdom are at milestone 4.

Milestones 5 and 6 also require financial accounts and balance sheets for the institutional sectors. Norway has obtained balance sheets that cover both non-financial assets and financial assets, but lacks financial accounts (recording transactions) for a complete set of sectors. Further sectoral analysis on changes in assets and liabilities in the national accounts and in the financial sectoral balance sheets, respectively, is needed first. United States and Canada are the only countries assigned milestone 6 in the UN scheme, while 9 countries have passed milestone 5; these are Finland, France, Germany, Netherlands, Portugal and Sweden, plus Australia, Ecuador and Japan outside Europe. In fact, Norway should have been listed among these.

United Nations admits their analysis is a simplified one which does not involve subjective judgements on the status of national accounts. Aspects of data quality are not taken into account, and other limitations to the procedure are pointed out. The quality aspect is however important in the

analysis and assessment of the GDP/GNI-calculations made by Eurostat, as already noted above.

A main point to be learned from the UN scheme is the big span between top and low among the countries' national accounts on global basis. If adjusting for the underreporting of detailed data in the period of analysis, we most probably would have found Norway in a position among the «top 10» as regards coverage of national accounts tables. This along with the Eurostat assessment might be regarded as a most outstanding sign of quality to the Norwegian GDP/GNI-calculations. It supports the favourable position that the Norwegian national accounts possess internationally today.

Further evaluations of the Norwegian national accounts

When lines for the future work on national accounts beyond the ordinary current tasks were drawn up in the early 1990s, two major tasks were put on the agenda: a general revision and the implementation of Revised SNA. These two development projects have been the important ones in the area of national accounts during the first half of the 1990s. A combined solution was sought, i.e. implementing the new international standards of national accounts (SNA 1993 and ESA 1995) within the framework of a general revision. It meant changes to concepts, nomenclatures and classifications as well. The quality of the estimates was improved by utilizing new and better primary statistics. Another sign of quality is the detailed approach, which continues to be one of the main attributes of the Norwegian national accounts.

ESA 1995, see Eurostat (1996), consists of 13 chapters that might also serve as a basis and framework for a short description and assessment of the Norwegian national accounts of today.

Chapter I General features

In the Norwegian national accounts, the distinction between the central framework for the real economy and the institutional sector accounts has been emphasized more than before, inter alia, through two separate annual NOS-publications, see Statistics Norway (1998a og 1998b). Recently, Statistics Norway has put higher priorities to labour accounts, quarterly accounts and regional accounts. Employment estimates as part of quarterly national accounts and annual summary national accounts by county are examples of this kind. Statistics Norway has always stressed the importance of harmonizing and standardizing concepts and classifications in the national accounts and balance of payments. This is now viewed in a wider perspective with the compilation of statistical standards for use in various fields, e.g. aggregated groupings of activities. In Norway, considerable experience has been gained on satellite accounts (e.g. on tourism) and more is expected to come.

Chapter II Units and groupings of units

In Norway, enterprises and establishments (local kind of activity units) for a long time have been considered the most important statistical units. The new structural statistics which are based on enterprises will be supplemented by establishment-based data in order to satisfy the needs of the national accounts. The integration between the national accounts and the balance of payments has lately been even more strengthened. Statistics Norway has long emphasized strongly the distinction between the dual economies of Mainland-Norway and that of Norwegian oil and shipping activities, and will continue to do so.

When it comes to groupings of units which are aggregated to institutional sectors and to industries, Statistics Norway has applied as basis the institutional sector classification in SNA 1993 / ESA 1995 and the activity classification NACE Rev.1 in ESA 1995 (the latter coincides with ISIC Rev.3 at the aggregated level presented in SNA 1993). Certain aggregated versions of these basic classifications are used in the national accounts. The development of more sub-sectors are foreseen, in particular within the corporation sectors (distinction between national private and foreign-controlled corporations) and within the household sector (more variants of sub-groups for socio-economic groups, households by region, etc.).

Chapter III Transactions in products

This chapter describes the transactions of variables forming a dominating part of the central framework of the real economy, i.e. output, intermediate consumption, final consumption expenditure, gross capital formation, exports and imports. Despite long good traditions in Statistics Norway in this central part, there are some new features that need some time for implementation and to become visible. One such feature is the extended definition of gross capital formation to include a category of valuables. More important is the new treatment of computer software as gross fixed capital formation. Another main feature of the new SNA/ESA is the introduction of two main concepts of final consumption, i.e. actual final consumption as the new one besides the traditional concept of final consumption expenditure. Revised purpose classifications are to be published in 1998, to be implemented at a later stage. For the treatment of financial intermediation services indirectly measured (FISIM), the present method might still be prolonged for several years, although allocation of FISIM to the various uses - causing higher GDP - will emerge in due time.

Improved primary statistics are necessary before exhaustive data on gross capital formation for national accounts purposes according to new definitions could be included. The new principles are already implemented in the field of final consumption, inviting to a diversified and interesting supplementary picture of the structure of consumption. Distinction between market and non-market production has been given a prominent role in national accounts tables, while the former grouping into sheltered and export-oriented and import-competing industries has been downgraded

in search for other alternatives that could be interesting for analytical use.

Chapter IV Distributive transactions

This chapter includes the various income accounts. Statistics Norway has made strong efforts to follow all principles in this wide area, both in terms of definitions, identifying proper accounts and further development. Challenges have been many: examples are investment grants no longer to be treated as subsidies (but capital transfers), and payments to household groups from general government now treated as government consumption expenditure while formerly private consumption expenditure. Figures on subsidies and social benefits are clearly affected from these definitional changes. Further large-scale development in this area of national accounts is not expected to take place, but smaller improvements might be needed.

Chapters V-VII Financial transactions, other flows and balance sheets

These chapters join the institutional sector accounts together through the balance sheets and changes in the balance sheets and deal with both non-financial and financial assets and liabilities. The non-financial assets part of the calculations is connected with the calculation of consumption of fixed capital as in the computing programme of Statistics Norway called BERKAP. In 1997, revised estimates for consumption of fixed capital and non-financial assets were published mainly following the same principal BERKAP approach as before, see Todsén (1997). In other non-financial assets, such as oil and natural gas reserves (as part of non-produced assets) and inventories, more independent calculations have been made, while regarded as kind of satellite accounting work in enlarged national accounts. To obtain a full picture of balance sheets and changes in balance sheets is a very ambitious and difficult task in the way it is defined in SNA/ESA. Hardly any country may be able to find good empirical solutions to this demanding pattern. Problematic for Norway is to obtain estimates on financial transactions, since the present approach used must involve indirect calculations (for the domestic sectors, not for the rest-of-the world sector) and would imply *inter alia* that revaluations must be determined. Much is still undone in this field. Sectoral financial balance sheets are however made according to long traditions in Statistics Norway.

Chapter VIII Sequence of accounts and balancing items

The chapter presents all the accounts in the central framework and shows how they connect all through the system of national accounts, from the production and income generation accounts through income distribution and use of income accounts, the accumulation accounts and to the balance sheets and changes in the balance sheet accounts. SAMs (Social Accounting Matrices) are also included in this framework. The notion of a total scheme has always been

considered important in the compilation work with national accounts in Statistics Norway, e.g. when in practice the national accounting scheme is drawn up in advance of the actual compilation work.

Chapter IX Input-output framework

The input-output framework in SNA 1993 og ESA 1995 consists of three types of tables, i.e. supply and use tables, tables linking the supply and use tables to the sector accounts, and symmetric input-output tables. The distinction between the first type as statistical tables and the third type as analytical or derived tables is made clear and direct in the new international standards of national accounts, influenced by countries like Norway from long traditions and successful experiences.

The supply and use tables are at the same time a central framework for the Norwegian calculations, particularly in annual national accounts, but also to in quarterly national accounts and national accounts by county. The table of links to the sector accounts should be developed during the next few years. There will always be a challenge for the Norwegian national accounts to retain the present profile of detailed supply and use tables. Detailed input-output framework is viewed as providing comprehensive statistical advantages, like in the estimations at constant prices, taxes on products on accruals basis, and for increased exhaustiveness, to mention some areas. More and more countries put supply and use tables higher on the agenda in order to improve on the quality aspects of national accounts. A complementary condition for such an improvement to take place surely is that primary statistics as such do not deteriorate. Methodically, the framework of product-oriented supply and use tables in Norway is a very suitable one, not least when also the CPA product classification – which is also used in ESA 1995 – has been introduced.

Chapter X Price and volume measures

The compilation of constant-price estimates is a very important part of national accounts. Price and volume measures including growth rates are obtained, and in order to ensure sufficient quality for these measures, several conditions should be fulfilled. These involve good estimates at current prices, good framework for the deflation procedure, good price or volume indicators, and furthermore, relevant methods for the treatment of new products. A central consideration has been to use weights that are fairly recent, i.e. introducing annual chaining technique by calculating estimates at previous year's prices. Two more issues have been more focussed on in the new international standards, the publication of real income estimates, and price and volume measures for inter-country comparisons.

In Norway, we have had a positive attitude towards these considerations on constant-price estimation. The detailed framework used for the current-price estimates compilation also has been the one used for the deflation into constant-price estimates. The annual chaining principle was intro-

duced already in 1990. To find most relevant indicators for the deflation procedure is still a demanding task, especially in the services area and for capital goods. Developing price statistics in these areas are considered a long-term task, not just for Norway but for virtually all countries. The same is true for the introduction of direct volume measures for government services. Statistics Norway has long experience in presenting real income estimates, and has participated in PPP (Purchasing Power Parities)-based calculations for improving the comparisons on GDP and other main aggregates between countries.

Chapter XI Population and labour inputs

Employment has been an area for which the ILO has taken the lead internationally. With SNA 1993 and ESA 1995, the ILO principles have been explicitly introduced into the national accounts. Not only is the variable employed persons entered into the national accounts tables, so have also full-time equivalent persons, number of jobs and total hours worked. In Norway, most of this is covered in the labour accounts developed some 10 years ago. We are therefore among very few countries that could analyse labour productivity based on national accounts data on total hours worked, which is the most relevant concept for labour inputs. To get a better grip on subsidiary jobs is a challenge for Statistics Norway in future, so as to estimate number of jobs properly. It has been considered important to start publishing quarterly labour accounts estimates.

Chapter XII Quarterly national accounts

A separate chapter on quarterly national accounts has been introduced in the ESA, to be supplemented by a handbook scheduled for publication in 1998. That handbook will give more detailed guidelines for such calculations. Statistics Norway has compiled quarterly national accounts data over several time periods, and since mid-1980s in close cooperation with the economic modelling work in Statistics Norway. Use of quarterly national accounts data has increased over the years, essential for analysing and forecasting current business cycle trends. Further development is envisaged in the fields of employment and compensation of employees, and more comprehensive income accounts should be developed, including household income and saving.

Chapter XIII Regional national accounts

ESA has also introduced a separate chapter on regional national accounts. It is essential for treating the regional aspects involved in political issues and sizeable measures allocated through the regional structural funds of the EU. Annual summary calculations have been initiated as well, and with a breakdown on different regional groupings. In Statistics Norway, traditions have been more closely directed at detailed input-output estimates by county for the purpose of providing relevant data for the preparation of regional plans by the county authorities. Such accounting data have normally been published by Statistics Norway

every 3 or 4 years, most recently for 1993. Summary accounts according to the ESA Directive are to be published for the years 1995 and 1996. Final consumption estimates are expected to be improved in quality, as more resources are put on providing regional household income estimates.

Other areas of development

Satellite accounting work on the Norwegian economic and environment accounts (NOREEA) project was initiated in 1997, also incorporating calculations on the size of oil and gas reserves as an integrated part, see Hass og Sørensen (1997). Another important satellite is tourism, an area into which Statistics Norway has played a role internationally and also published a report on the economic importance of tourism in Norway. Still another area is health.

Revised national accounts series according to the new standards were published in 1997 back to 1978 and will be carried further back to 1962. In addition, work on historical national accounts is planned and connected to a Nordic project on harmonizing the methods used to compile such accounts. The plan involve revised series for the national accounts as far back as 1830.

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