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THE FUTURE OF THE NATIONAL ACCOUNTS

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The views expressed in this paper
are those of the author and do
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Abstract

This paper investigates the consequences of globalisation, European unification, automation and more market-oriented government for the national accounts. National accounts statistics will continue their role as a central overview on the progress of national economies and become more internationally standardized with respect to concepts, data quality and range of the national accounts statistics published. However, links to current policy issues (environment, social security, Research and Development, Human Capital, small enterprises, employment by sex, age and education) and specific data needs (e.g. for estimating tax revenues, tax expenditure and tax burdens) should be improved. National accounts statistics should also be made more transparent and attractive. Research is in particular required on the use and misuse of national accounts statistics and on compilation methods.

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1. Introduction

Globalisation, regionalisation, electronic highways, automation, deregulation, privatization and decentralization. These are fashionable words. They show that on the brink of the twenty-first century the world is undergoing dramatic changes. The national accounts, being a product of this world, is changing too, e.g. data inputs, data processing techniques, data presentation and data needs are developing (at a moderate pace). In this paper, we investigate the future of the national accounts in such changing times.

The future of the national accounts is best discussed on the basis of a clear notion of what actually constitutes the present, e.g. what are the characteristics of the national accounts as they exist today? This is the topic of section 2.

Four of the trends that are shaping the future of the national accounts are the subject of this paper: globalisation, regionalisation like the European unification, automation and more market-oriented government. In sections 3-6, the future of the national accounts is sketched in view of these four general trends. Each trend will be discussed starting from the recent developments in national accounting.

Conclusions are drawn in section 7.

2. What is the present national accounts?

The national accounts started life as experimental, unofficial, efforts to compile figures on national income, production and expenditure. Early estimates usually served a specific purpose, e.g. whether and how a war could be financed (see Bos, 1992a). If we look at what constitutes national accounts at present, we see an enormous development. The showpiece and principal product of the national accounts have become the *official, internationally standardized, national accounts statistics; they are the world's standard overview of the progress of national economies*. This standard statistic and its conceptual framework serve as an universal statistic and language for economic discussions, analyses and decision-making. This can be regarded as one of the major achievements of economic science in the twentieth century.

The national accounts as an official, internationally standardized, overview statistic can be described on the basis of *ten characteristics*.

Firstly, the national accounts figures provide an overview of the *whole or a sizeable part of the economic circuit, usually broken down by group of resident units (industries/sectors)*. For example, the national accounts can give a quantitative picture of production, income distribution, income redistribution, capital formation and the financing of these expenditure.

The second characteristic is that the national accounts figures provide a *complete picture for all the resident units by type of transaction (/other economic flow/stock/balancing item)*. For example, the national accounts figures do not only show output for manufacturing but for all industries in the national economy.

The third characteristic is that the national accounts figures are compiled and presented as part of an *accounting framework* that is not

only complete but also coherent and consistent. This framework consists of a set of tables and accounts that shows economic flows and stocks by sector, industry and types of transactions. The consistency of the concepts greatly contributes to the usefulness of the national accounts figures, as all concepts within the framework can be related to each other in a meaningful way. Examples are figures on GNP per capita, productivity figures and government deficit as a percentage of GDP.

The fourth characteristic is that *the core of the accounting framework* contains only national accounts figures in current prices. All other national accounts figures have a logical and consistent relationship with these figures but are presented aside. This applies to national accounts figures on prices, volumes, values in constant prices, ratios (e.g. productivity), changes in values, relative shares in values, time-series and international comparisons. A major part of the national accounts statistics are thus not explicitly presented as accounts (though they have a direct relationship with them).

The fifth characteristic is that the national accounts figures are usually an annual set of overview-statistics, e.g. consisting of quarterly accounts, provisional annual national accounts of last year, semi-definitive annual national accounts for the year before last year and definitive annual national accounts for two years before last year. These overviews differ in timing, detail, accuracy and coverage of the economic circuit: the more recent the year (period), the less detail, accuracy and coverage.

The sixth characteristic is that the official national accounts figures are mainly based on *internationally standardized concepts and classifications*. This enables international comparison of national accounts figures. These international standards imply also that the official national accounts figures (see also ESA95, paras 1.05-1.23 and Bos, 1993):

- *focus on stocks and flows that are readily observable in monetary terms or that have a clear monetary counterpart. For*

example, unpaid domestic services and voluntary work are not taken into account in measuring production, final consumption, income and employment. Nevertheless, this does not imply that the national accounts statistics measure merely gross money flows: money flows are included on a transactions basis, most money flows are included in a consolidated form (e.g. within an industry or sector or with the Rest of the World), a rerouted form or a deconsolidated form and various flows and stocks are included without a directly corresponding money flow (e.g. the services of owner-occupied dwellings, income in kind and capital consumption).

- are based on multi-purpose concepts and classifications; these are to some extent flexible but may not be the most suitable for specific purposes.
- are based on concepts and classifications relevant and applicable all over the world; these may not take full account of specific national circumstances.
- are based on concepts and classifications that are well-established and fixed for a long period (on this constancy of concepts, see Bos, 1994b); this reduces the vulnerability to political pressure.
- are not based on administrative or specifically national concepts and classifications, like business accounts, tax data and targets and agreements formulated in national policy.

The seventh characteristic is that the national accounts figures will reflect the data sources, statistical techniques and compilation strategies used. For example:

- biases in national accounts figures are most likely for the parts of the economy on which data are sparse or merely absent, e.g. on services industries or on small enterprises;
- deflating values with Laspeyres-price indices result in Paasche-volume indices;
- using input indicators for deflating output and value added ignores productivity increases;

- a common compilation strategy is the 'strategy of continuity'. This amounts to a choice in favour of a proper recording of changes in levels instead of aiming at a proper recording of the levels themselves;
- a strategy of full consistency amounts to not accepting any statistical discrepancies, while a less rigid strategy of consistency will amount to accepting and publishing some discrepancies (e.g. between net lending according to the capital account and according to the financial account).

The eighth characteristic is that the official national accounts figures of countries all over the world have some *core statistical programme in common* (e.g. figures on GDP are available for nearly all countries in the world), *but also show an enormous range of differences in priorities and resources*. Examples of the latter are:

- only some countries in the world publish annually input-output tables;
- some countries in the EU regard monthly and quarterly national accounts figures as their major national accounts output, while others do not publish such figures at all;
- some countries regard price-indexes that account well for new products and changes in quality a top-priority, while most other countries spent relatively few resources on capturing such changes;
- some countries regard achieving consistency between the national accounts and statistics of employment a priority, while others do not take efforts to ensure such consistency.

The ninth characteristic is that the *national accounts figures serves as a frame of reference for other statistics*. However, it should be realized that the links with other statistics are usually not straightforward. Common linkage problems are:

- differences in concepts;
- differences in classification;
- differences in statistical units and population;

- inconsistencies between the statistic and the data sources used for estimating the national accounts figures;
- differences due to the balancing of the national accounts figures;
- differences due to different strategies of continuity.

The tenth characteristic is that the *national accounts figures* are compiled and published officially, i.e. by an official institution like a Central Statistical Office, the Ministry of Finance or the Central Bank. This official status is important for ensuring the financing of the compilation process and for national and international acceptance of the figures. However, when the government tries to influence the national accounts figures for political purposes (e.g. the economic growth figures or the employment figures), this official status can also have adverse effects on the quality and reliability of the national accounts figures.

The present national accounts is thus dominated by the official, internationally standardized, national accounts statistics. However, also two important *alternative types of national accounts statistics* exist:

- non-official but based on the international concepts;
- not based on the international concepts.

Non-official figures based on the international concepts usually intend to fill the *gaps in the officially published national accounts statistics*. This pertains e.g. to the historical time series compiled by Maddison (1982). Non-official figures based on the international concepts may also *try to improve the official estimates* by using other data sources or other estimation procedures. Examples of this are:

- the standardized productivity estimates compiled by Maddison and van Ark (1994): in order to obtain consistent productivity estimates, he uses the same data source for estimating output and employment; this link between output and employment is indeed a frequent weakness of the official figures, see above;

- official estimates of GNP corrected by adding guesstimates of the black economy assumed to be missing in the estimates (the Economist).

Some national accounts statistics are also based on concepts other than the international concepts. Over time, many of such concepts have later been incorporated in the international guidelines. For the most recent set of guidelines this applies e.g. to the chain indices already used by the Dutch national accounts and Eisner's estimates on holding gains and losses in 1985. However, for some concepts this is unlikely to happen, as they are fundamentally different from the ones in the international guidelines. This applies e.g. to extended accounts by Eisner (1988) and to national accounts figures based on purely national administrative concepts or business accounts concepts.

All these non-official or non-standard efforts for compiling national accounts figures have an important signalling function: they show where there is a concrete demand for extension, change or improvement of the official, internationally standardized, national accounts statistics.

3. Globalisation

Globalisation refers to the increasing interactions between countries and regions all over the world: goods, services, financial flows, information (faxes, phone-calls, tv-news and communication via internet), pollution and people (tourists, business men, politicians and refugees): they all move rapidly and in increasing quantities over the globe. This establishes a world market (e.g. for McDonalds hamburgers, CocaCola, Swiss watches, Dutch tulips, Windows-software and financial capital), a global production process (e.g. a car may have been produced partly in Asia, partly in the USA and partly in Europe) and universal norms and ideologies (e.g. capitalism, democracy, human rights).

Globalisation is not a recent development. For example, World War II can be regarded as the first real 'world' war as it involved Northern America, Europe, major parts of Asia and North Africa. However, during the last decade, globalisation seems to have accelerated its pace, e.g. the era of communism has ended suddenly and internet is rapidly conquering the world.

The official, internationally standardized, national accounts figures are typical products of globalisation:

- all four generations of guidelines have been written and issued under the auspices of the United Nations and other international organizations (the World Bank, OECD, IMF and Eurostat);
- since the guidelines of 1953, guidelines are provided for compiling national accounts in countries all over the whole world, i.e. for all types of developed and developing countries but until recently excluding the (former-)communist countries;
- the United Nations publishes voluminous statistical yearbooks with national accounts figures from all countries;
- the United Nations, other international organizations and some countries have provided much technical assistance in setting up

and improving the national accounts all over the world;
- the contributions to the United Nations are based on the official GNP figures.

Recently, a new set of universal guidelines on national accounting (the SNA93) has been issued. For the national accounts, the SNA93 is an important step forward. It has drastically improved the links with other statistics and their guidelines (e.g. Balance of Payments Statistics), it has completed the accounting system by introducing balance sheets and the other changes in assets accounts (e.g. now also holding gains and losses are included), input-output tables are now well-explained and presented as statistical tables with a clear link to the rest of the accounting system, chain indices and purchasing power parities have been introduced, the many new financial instruments have been taken account of, satellites and Social Accounting Matrices have been incorporated and the text has become much more readable and accessible and explains a lot of the motivations behind the national accounting concepts.

The influence of globalisation on the SNA93 is evident in many respects:

- the sectors Non-financial and Financial Corporations are now subclassified into those that are foreign controlled and those that are not. In this way, foreign influence via direct investment can be monitored in the national accounts.
- a new and separate chapter is devoted to an environmental module supplementing the standard national accounts. This reflects an increased attention for one of the most typical global problems, i.e. the environment.
- the end of communism had as a direct consequence that the SNA93 is now also applied in the former-communist countries; previously, they applied a fundamentally different system of national accounts (the Material Product System);
- countries, e.g. the USA, are more willing to comply to the international concepts and classifications than before. Differences between the national system of accounts and the

international standards are considered to be less desirable and acceptable;

- the explicit requirement in revising the European guidelines on national accounting (ESA95) was consistency with the SNA93. So, despite having guidelines of their own, the EU-Member States fully accept the SNA93 as a world and European standard.

Globalisation has influenced the demand for and supply of national accounts statistics in many ways. These changes determine the future of the national accounts.

Changes in the demand for national accounts statistics are:

- increased demand for describing relations and interactions with other countries and regions all over the world; these relations can pertain to imports and exports, direct investments, intra-company flows, establishment trade, financial flows, flows of information and knowledge and human flows;
- increased demand for statistics that are comparable all over the world; this suggests a further extension and standardization of official, internationally standardize, national accounts figures.
- increased demand for statistics that describe the world economy as a whole and the roles played by the various regions; this implies that national accounts figures compiled by various national authorities should be added and made consistent;
- increased demand for statistics that describe phenomena with a strong global dimension, e.g. the environment, Research and Development, financial flows and intangible assets.
- increased demand for statistics that describe factors that induce globalisation, e.g. deregulation (abolishment of intra-EU customs borders or GATT agreements) and technological progress (computers, satellites, internet).

These changes in the demand will lead to further changes in the supply of national accounts figures. Globalisation influences the

national accounts figures also by changing the availability and quality of data sources used for compiling these figures. Some major examples are:

- increasing problems in obtaining accurate national information from internationally operating enterprises;
- decreasing completeness and reliability of administrative data sources due to an increase in the mobility of companies and persons;
- increasing importance of transfer-pricing;
- increasing importance of cross-border activities that are relatively difficult to measure, e.g. construction, engineering projects and processing to order.

These examples suggest that the quality of national accounts figures will deteriorate due to globalisation and that some changes in the present compilation methods are required. The latter could imply e.g. that extra attention is paid to multinationals to ensure consistency between their financial and non-financial figures and between their output in various countries (to avoid double-counting of output).

Globalisation and the fundamental changes in economic structure influence also the relevance of the national accounts statistics. National accounts statistics that focus on measuring flows of goods, tangible assets and production as defined in the SNA93, become more and more an incomplete overview on what is happening in national economies. Production can only be understood when also the revenues from holding gains (e.g. hedging and speculation), the wide ranges of intangible assets (e.g. copy-rights, broadcasting rights) and services (e.g. insurance services, various types of consultancy, pay-per-view tv, information services provided by telephone, cable wire or internet-connections) and the financing of production are seriously taken account of. The present classifications of services and intangible assets need fundamental reconsideration (see e.g. Postner, 1994). Similarly, employment can only be understood when the various types of 'employment' like employment via temporary agencies, subcontracting, au-pair work, volunteer work, do-it-yourself activities and unpaid-household services

are seriously taken account of (though imputing values for e.g. volunteer work is not suitable for the core system of accounts). For understanding consumption expenditure, measuring assets, liabilities and holding gains and losses of households (e.g. on their dwellings) become also more important. National accounts statistics should thus provide a complete and balanced overview that keeps track of all these fundamental changes in the national economies.

The process of unification in Europe can be regarded as globalisation at a regional level. The European unification is already drastically changing the national accounts of the EU-Member States. These changes suggest also changes that are to come at the world level, as other countries and regions will face data demands similar to those in Europe and will want to have data comparable to those of the EU-Member States. When new Member States enter the European Union (e.g. Hungary, Poland and Turkey; they are now labelled PACs: Pre-Accession Countries) and other OECD-countries like the United States, Japan and Australia will follow (part of) the work done in the EU, this will be a further stimulus for non-OECD countries to follow also the European example.

4. European unification as an example of regionalisation

4.1 Introduction

Soon after the second World War, first attempts were made for European integration. In 1952, the European Coal and Steel Community was created. Six countries participated: France, West-Germany, Italy, the Netherlands, Belgium and Luxemburg. This limitation to coal and steel lasted till 1958. Then, the same countries established the European Economic Community (EEC) and the European Community for Atomic Energy (Euratom). By leaps and bounds, European cooperation has expanded and intensified, but they kept its economic focus: over the years it has mainly coordinated national economic policies, established a common agricultural policy and removed barriers that impede the free flow of goods, services, persons and financial capital. In 1972, the United Kingdom, Ireland and Denmark joined. Later also Greece (1981), Spain and Portugal (both in 1986) joined. In 1995, after a new group of countries had been admitted (Austria, Sweden and Finland), a European Union (EU) of fifteen Member States was established.

The process of European unification created a large and increasing demand for economic and social statistics on Member States. This pertains to national accounts statistics as well as to many specific economic and social statistics. A European Statistical Office (Eurostat) was established in 1958 (on the European Community and its statistical system, see DeMichelis, 1993). The first European guidelines on national accounting were issued in 1970; a second edition appeared in 1979. Now regularly a limited set of national accounts statistics on the Member States are published.

Recently, five major developments have revolutionized European national accounting:

- the work of the GNP Committee on validating and improving the quality and comparability of GNP estimates of the Member States;
- changes to the major inputs for the national accounts, e.g. new regulations on business registers and various statistical surveys;
- the use of national accounts figures as entrance criteria for the European Monetary Union.
- the new European guidelines on national accounting (ESA95);
- the European statistical programme for national accounts statistics.

We will discuss these five developments in subsections 4.2-4.6. Lessons that can be drawn from the European experience are the topic of subsection 4.7.

4.2. The GNP Committee

In 1989, the Member States' GNP figures became the basis for a new, fourth, own resource of the Commission. This fourth resource will gradually become the Commission's largest financial (budgetary) resources. A committee consisting of representatives from all Member States was created to validate and help improving the quality and comparability of the Member States' GNP estimates. This GNP Committee has initiated a lot of pioneering work:

- discussions and jurisprudence on the proper interpretation of ESA concepts. For example, Commission Decisions on the interpretation of the ESA79 were issued with respect to taxes on products and services of owner-occupied dwellings;
- documentation of the Member States' data sources and methods for compiling GNP. Such quite accurate, complete and up-to-date descriptions did not exist in most Member States and hardly exist anywhere in the world.
- auditing missions to validate the quality of the Member States GNP figures and the compliance with the ESA79;
- discussions of the Commission's auditing reports in the GNP

Committee;

- discussions on the merits and limitations of various types of data sources and estimation methods for compiling GNP figures;
- discussions and concrete proposals on how to estimate some well-known problem areas in the national accounts, e.g. the underground economy, services of owner-occupied dwellings, income in kind and inconsistencies between the Foreign Trade Statistics of EU-member states; a Commission Decision even prescribed how to estimate the services of owner-occupied dwellings;
- validation of employment underlying the Member States' GNP estimates on the basis of alternative estimates of employment.
- conceptual modifications in order to comply to the ESA79 instead of the SNA53 (i.e. not the ESA1979 or the SNA68 but the anachronistic guidelines of 1953 were still applied by some Member States!).
- drastic revisions of the national accounts in some Member States; they also resulted in sizeable adjustments in the GNP estimates, e.g. 10%.

An overview of the work of the GNP Committee is about to be published in the Official Journal of the European Communities (in 1996).

The success of the GNP committee has been possible thanks to a combination of various factors: -the positive attitudes and expert skills of all the people involved, from Eurostat and from the Member States; -the political and financial pressure on making clear progress; -the existence of a legal framework for the GNP Committee and the possibility to legalize some of its proposals in the form of Commission Decisions, -confidentiality of the country-specific discussions, reports and inventories (however, several inventories of Member States have been made public by the Member States themselves, e.g. Bos and Gorter, 1993); -money to compensate the Member States for all the extra work imposed by the GNP Committee, e.g. the writing of inventories and reports, responding to detailed questionnaires, validating employment underlying GNP estimates and improving the estimation methods. For some

Member States, also a substantial amount of technical assistance was arranged. Each of these factors has been essential for this success.

4.3 Developments in the inputs for the national accounts

For good-quality GNP estimates, an up-to-date and complete business register and statistics covering major parts of output, expenditure or income are indispensable. The work of the GNP Committee revealed that in many Member States business registers needed improvement and that the coverage of their basic statistics showed some major lacunae, in particular with respect to the services industries. Recently, regulations were issued by the Commission covering also these weak and for the national accounts very important areas. So, in some years time, it will be much easier for EU-national accountants to make good GNP estimates. Nevertheless, a lot of work still remains to be done. Perhaps the most disappointing issue are the statistical units: the various official EU-regulations are in this respect not at all harmonized and even conflicting: e.g. the structural business surveys are based on institutional units while the national accountants have to compile figures on industries based on local Kind of Activity Units, i.e. for parts of the institutional units.

The degree of involvement of Eurostat with the Member States' statistics range widely. Traditionally the role was limited to disseminating the Member States data, to issuing guidelines on concepts and classifications and to initiating regulations on the scope of the data to be submitted. The fourth own resource has started the active monitoring and auditing of the concepts, data sources and statistical methods used by the Member States in compiling GNP figures. The European experience also reveals an even more active role by Eurostat in achieving comparable statistics: *the processing of the Member States' data by Eurostat*. The latter occurs now for the harmonized Labour Force Survey and the purchasing power parities.

Deregulation is also part of the process of European unification. In particular the removal of the customs formalities at the intra-EU borders is having significant consequences for compiling the national accounts (see Bos, 1992c and 1996b). The European experience can learn us about the consequences of customs-unions and free trade zones for the national accounts.

In order to establish a single European market, on 31 December 1992 customs formalities at the intra-EU borders were been abolished. At the same time, a new system to register imports and exports of goods between Member States has come into force: the Intrastat-system. Under the Intrastat system, enterprises are obliged to send a monthly statistical declaration on intra-community trade in merchandise to the relevant administration in each Member State. The replacement of customs data on intra-EU trade by Intrastat-information has had direct effects on the Foreign Trade Statistics: they became in most Member States less detailed, less accurate and less timely.

The Foreign Trade Statistics are a major data source for the national accounts statistics. They are not only used for estimating imports and exports, but -as they are very detailed and available monthly and with limited delay- they also play a major role in balancing the accounts and in compiling figures on other variables via commodity-flow estimates (e.g. production and value added). This applies both to short term figures, to the annual accounts and to the detailed input-output tables. Furthermore, imports and exports figures play an important role in the expenditure estimates of GDP.

The changes in the quality of the Foreign Trade Statistics due to the abolition of the intra-EU customs borders has influenced the quality of all these estimates (see Bos, 1996). However, assessing the net effect of the introduction of the Intrastat-system is not straight-forward, for various reasons: some of the problems are temporary, some Member States do not seem to have serious problems, the Intrastat-system offers opportunities that are perhaps not fully exploited by the national

accountants (e.g. for linking imports and exports figures with other data at the enterprise level), the Intrastat-system is now being reconsidered and inconsistencies between the imports and exports figures of trading partners already existed before the Intrastat-system. The Intrastat-system may therefore also be a stimulus to reconsider present national accounts compilation strategies and be more critical about the former Foreign Trade Statistics: their detail and timeliness suggested an illusory degree of accuracy and completeness (see also van Bergeijk, 1995)

4.4 National accounts figures as entrance criteria for the EMU

In the Treaty of Maastricht, the entrance criteria for European Monetary Union are based on national accounts figures: government deficit (i.e. net lending by the sector government) should not exceed 3% of GDP and government debt should not exceed 60% of GDP or show a downward movement towards this percentage. This has stimulated the work of the GNP committee and in other Eurostat fora (conceptually and in estimation practice GNP and GDP are very close: GNP is just one extra step), induced discussions on the proper interpretation of the national accounts concepts involved (e.g. how to account for privatization? and what is the sector General government?) and has accelerated in most Member States the compilation of financial accounts and balance sheets, in particular for the sector General government. Moreover, several auditing missions have been held.

A stable rate of inflation is another entrance criterion for the European Monetary Union. This has led to the development of an European, harmonised, consumer price index. Such harmonization was urgently needed, because the concepts and product ranges used by the Member States for their national consumer price indices differed substantially. This work may also induce improvements in the quality and comparability of price-statistics used for compiling the national accounts. This will then improve the Member States national accounts' estimates on

inflation, volume changes, constant prices and economic growth rates.

The European Monetary Union is now the major political project of the EU. The entrance criteria in terms of national accounts figures created a large political interest in these national accounts figures, in particular at the Central Banks and the Ministries of Finance. As a consequence, the national accountant's work on the sector government is now much more actively monitored.

In the Netherlands, an important external effect of the EMU-entrance criteria is that the macro-economic reporting on the central government's budget will be revised in order to comply with the new European guidelines on national accounting (ESA95). This will facilitate drastically the work for the national accountants, as most modifications for conceptual differences become superfluous (except for e.g. differences between the time of recording).

The creation of the EMU has increased the demand for statistical information on financial flows within the European Union and national Balance of Payments data. However, in the long run, after the EMU has been established for some time, statistical information on intra-EMU money flows and national Balance of Payments data will become superfluous for European monetary policy. For the national accounts, this will mean a decreased interest in national financial accounts and national Rest of the World accounts and an increased interest in European financial accounts and European Rest of the World accounts.

4.5 The ESA95

Immediately after the completion of the SNA93, the drafting of the new European guidelines on national accounting (ESA95) started. The final draft was officially approved by the Member States's statisticians in 1995; it will be published in 1996. The ESA95 is fully consistent with the SNA93 but has some clear value added for EU Member States, and also

for national accounting in general.

A novelty of the ESA95 is that it is part of an official regulation of the EU and thus a *legal document*. This contrasts with the SNA93 and ESA79: these are 'gentlemen's-agreements' that were written as guidelines but their application is binding in some situations. The explicit legal character of the ESA95 is necessary considering the many and important administrative uses made of the national accounts figures. This pertains not only to the fourth own resource and the entrance criteria for the European Union. Examples of other administrative uses by the European Union are:

- the ceiling for the total own resources of the European Commission is determined as a percentage of the Member States' GNP figures;
- at present, the major own resource of the Commission is the VAT-own resource. The contributions by the Member States for this resource are largely affected by the national accounts figures (in order to calculate the average VAT-rate);
- the sizeable expenditure for the Structural Funds of the European Union (granted to 'poor' and backward regions) are based on regionalised national accounts figures (regional domestic product per capita);
- several other types of expenditure by the Commission are indexed or linked to national accounts figures, e.g. those on Research and Development.
- the contributions by the national central banks for financing the European Monetary Institute ('the European central bank') are based on GDP figures (and on population figures).

In several respects, the ESA95 is *more accurate and precise* than the SNA93 (for a comparison of the ESA95 and the SNA93, see also ESA95, para 1.24). This reflects not only the different styles of presentation. It reflects also the focus of the ESA95 on economies in Europe instead of on the whole world and the fact that ESA95 was written some years later (accurate phrases in SNA93 were often copied and several inaccurate ones

and minor errors were modified for the ESA95; lessons were also learned from the conceptual and practical problems raised in the GNP Committee). It also reflects *the European need to have stricter rules and a greater degree of conceptual harmonization than at the world level.*

The major example of the latter pertains to the distinction between market and other non-market. This distinction is important for both the sector classification (e.g. the sector government) and the measurement of output, value added, GDP and GNP. In drafting the SNA93 no agreement could be reached on a clear-cut definition and a rather general and vague phrasing was introduced. For European purposes, such a definition was not acceptable considering the uses made of the national accounts figures, e.g. for the GNP own resource and the European Monetary Union. The ESA95 contains therefore a much clearer and stricter distinction between market and other non-market (though there are still some problems of interpretation and application). Another example pertains to the consumption of the Financial Services Indirectly Measured: the SNA93 leaves a choice, while the ESA95 chooses one method of allocating these services (though, at the moment, it is not yet clear which method will be chosen).

4.6 The European statistical programme for national accounts statistics

The ESA95 was accompanied by a statistical programme for the national accounts statistics. This programme obliges Member States to compile an extensive set of national accounts statistics, e.g. quarterly accounts, supply and use tables, a whole range of sector accounts and regional accounts. For most Member States, meeting the demands of this statistical programme will imply a massive effort as it amounts to a drastic extension and speeding up of the national accounts statistics presently compiled. As a consequence of this ambitious statistical programme, in about 2005 a balanced set of national accounts statistics will be available for the EU-Member States.

4.7 Lessons that can be learned from the European experience

The European unification is a forerunner of regionalisations elsewhere in the world, e.g. of the economic union between the United States, Canada and Mexico (NAFTA). The European unification also has many similarities with globalisation. So, the European experience can give clues to what globalisation and regionalisation elsewhere in the world will mean for the national accounts. Will globalisation reduce the role of the 'national' accounts statistics?

The European unification has not made national accounts statistics superfluous. Quite the contrary, it has increased the demand for a balanced set of national accounts statistics that is comparable and available for all EU-Member States; this set includes not only 'national' accounts statistics but also regional accounts statistics. Some national accounts figures have been selected to play a special role in the European unification: GNP figures will probably be the Commission's major own resource in the future and national accounts figures on government deficit and debt will play central roles in coordinating and monitoring the European monetary policy.

Furthermore, the Member States and the Commission have been aware that the present national accounts do not suffice for such usages. They have therefore launched an ambitious programme for improving the quality and comparability of present national accounts figures and for drastically extending the set of national accounts statistics that are available for all EU-Member States.

Also the need for a legal framework for the national accounts figures and concepts was acknowledged. A legal framework clarifies the responsibilities of all parties involved and indicates an objective way of resolving conflicts. Considering the great political and financial importance attached to the national accounts figures, such a legal framework is warranted.

The major contribution of the GNP Committee has been that it has shown how to bridge the gap between the international guidelines and national compilation practice. To achieve this, jurisprudence, auditing, special support programmes for statistically less advanced countries and further development of national accounts compilation techniques are required. Also clear minimum quality standards on data sources and estimation methods should be set for each type of national accounts statistics. These should be further developed at the European and global level.

The use of national accounts figures for important political or financial purposes can endanger the integrity and balance of the national accounts statistics. It may induce political pressure on the outcome of national accounts statistics, it can lead to an excessive focus on the national accounts variables used for these political or financial purposes and can paralyse the further development of the national accounts statistics. This issue was explicitly addressed by a paper from the Austrian Statistical Office, which was recently presented at a joint UN-ECE/OECD/Eurostat meeting (Franz, 1996). In Europe, these dangers have been contained by the establishment of a legal framework, auditing procedures, improvements of the inputs for the national accounts, linkage of the ESA95 to the SNA93 and a statistical programme that aims to provide a balanced set of national accounts statistics in about 2005. In the short run, these measures have drastically improved the comparability of European national accounts statistics. Nevertheless, in the longer run, care should be taken that some of the Austrian worries come true. The Austrian Statistical Office (Franz, 1996, p. 4) proposes therefore:

- to put the issue on the permanent agenda of the competent international fora;
- to establish regular links to the scientific level "to get feed back on the suitability of the various concepts with a view of theoretical needs";
- "to identify and maintain elements of flexibility felt necessary in the wider context. In particular, the anticipated effects of

ad hoc solutions by means of legalistic measures, and the consequences of alternative solutions may be kept under study".

5. Automation

Automation is changing the world and also the national accounts statistics. The national accounts statistics are affected in many ways. Automation changes the statistics used as inputs for the national accounts. Transmitting and processing of administrative and survey data will become faster and in general less prone to human error. However, when errors do occur the consequences can be much more dramatic as they are more unexpected, less likely to be detected and may more easily be drawn to ridiculous conclusions (as the statisticians can think too easily that 'the machine' has taken over responsibility).

Automation has also changed the dissemination of national accounts figures, e.g. in the form of a publicly available electronic data bases. In this section we will focus on two other changes due to automation:

- changes in the compilation of national accounts figures;
- changes in the presentation of national accounts figures.

Only some decades ago, compiling national accounts figures was paper and pencil work. Then, computers and adding machines started to help processing and storing the data. Since then, the computers' calculation speed and the software have drastically advanced. Common tools for national accountants are now networks of personal computers running spreadsheet- and database programmes for most of the normal processing work, a central computer for the most demanding calculations and pocket calculators for simple and short-cut checks of data.

The continuous developments in hardware and software involve a lot of *extra work* for national accountants. They have to get accustomed to the new hardware and software, modify their working habits and compilation methods, convert and re-process old files and anticipate new changes. For example, for the Dutch national accountants, a transition to Windows95, Word5.0, Excel 7.0 and Paradox has just started.

The continuous developments in hardware and software imply also a lot of new possibilities with respect to the processing of data, the linking of data, the validation of data and balancing data. For various reasons, however, full automation of the compilation of the national accounts figures seems unlikely, even in the distant future.

National accounts figures are compiled on the basis of very heterogeneous sets of information which are incomplete, inconsistent and often changing from one year to another. These changes may pertain to:

- the accuracy of the figures, e.g. the accuracy of the Foreign Trade Statistics of most EU-Member States drastically decreased due to the introduction of the Intrastat-system for recording intra-EU trade;
- the timeliness of the figures, e.g. a statistic may suddenly arrive too late for compiling the national accounts figures in time;
- the completeness of the figures, e.g. the decentralisation of government actually is rapidly decreasing the coverage of the central government information, while in the short run no comparable information may be available on the decentralised government units;
- the concepts underlying the figures, e.g. changes in tax regulations change tax data and changes in the social security system may change the concepts of wages, social security contributions and social benefits used in many data sources, like industry-statistics, wage-data and social-security statistics;
- the classifications used in presenting the figures, e.g. the classification by product and by industry of the European industry-statistics has changed recently.

The economy is changing too, e.g. new products are introduced, enterprises merge, others go bankrupt, the social security system is reorganized, the government is privatizing, decentralizing, abolishing some types of taxes and introducing new ones, leasing cars and machinery

gets popular, people are more contracted out and working more via temporary agencies and the banks are drastically automating a major part of their services. Such changes in the economy are another reason that the data to be used for compiling the national accounts change frequently in coverage, definitions and accuracy. The changes in the economy make it also difficult to anticipate incompleteness and inconsistencies in the various inputs for the national accounts.

The national accounts is a whole range of statistics that is consistent in its concepts, classifications and figures. This consistency is a great merit for users of these statistics. However, this consistency implies also that a numerical change in one part of the system has repercussions for many other parts. For example, a change in output figures for the construction industry can influence the estimates on its value added, its operating surplus, its taxes on output, its value added per employee, capital formation of construction works by other industries, Domestic Product and saving and net lending of the national economy. Furthermore, all these figures should show plausible changes over time. This implies that problems in a specific part of a national accounts statistic (e.g. unexpected inconsistencies) can spread like a disease over the whole range of national accounts statistics.

This 'disease' of inconsistency can only be cured by taking account of the whole system of national accounts, all its interlinked statistics and all available knowledge on the national economy and its recent changes; the latter includes also various types of qualitative knowledge (e.g. from newspaper-articles on a strike or disaster in one specific branch or incidental reports and studies on a big company or a specific issue, e.g. underreporting to tax authorities). *Compiling the national accounts can best be regarded as solving a fuzzy problem: straight-forward optimal solutions do not exist, but some solutions are clearly better than others.*

The scope of the outputs of work on the national accounts is often also frequently changing, e.g. in timing, detail, classification,

concepts and scope. These changes imply also that the inputs that can be used change (e.g. more timely publication of data can make it impossible to use data sources arriving late) and that the inputs should be used differently (e.g. changes in the modifications to correct for differences in definition and limitations in coverage).

Compiling the national accounts is an interactive and partly ad hoc procedure where also knowledge of a country's specific institutional arrangements and business practices is required. This implies that software for compiling the national accounts should be flexible and open for change very quickly and easily. Only in this way, a whole range of consistent national accounts statistics can be published on the basis of imperfect and incomplete inputs while these inputs, the economy and the data to be published change frequently and often unexpectedly.

Automation has already drastically changed national accounts procedures and will change it further. Some barriers to further automation will be removed. Data sources that serve as inputs for the national accounts will become more and more standardized. Know-how on national accounts compilation techniques (e.g. balancing detailed supply and use tables) and strategies (e.g. strategy of continuity: at what level of aggregation will it be applied?) will be further developed and spread internationally. For typical compilation problems (e.g. how to change from one product-classification to another? how to calculate time-series on the basis of this new product-classification?) standard solutions will be worked out. International software can be developed for processing and checking some standard inputs, for balancing the accounts, for a proper rounding off of the national accounts data and for calculating revised time-series. All these software should leave room for interactive and ad hoc adjustments and be flexible enough to cope with changes in the inputs, the economy (e.g. some new types of taxes) or the desired outputs.

Automation is also drastically improving the presentation of the national accounts figures: details and links can be better, clearer and

easier shown in an interactive data base system. Nevertheless, it should be realized that national accounts statistics often do not show more details for reasons of confidentiality or because the data at a more detailed level are not reliable or even absent. Automation can not solve these reasons for limited detail in the national accounts statistics.

National statistical offices like Statistics Netherlands are already starting to present their national accounts figures as part of publicly accessible data bases that include all available economic and social statistics. This presentation will make inconsistencies between statistics and their differences in concepts and classifications more visible and thus also more unacceptable to users of these statistics. This presentation will therefore stimulate the development of consistent sets of official economic and social statistics; in such a set, the extended national accounts statistics should play the role of the central overview-statistic.

6. More market-oriented government

6.1 Introduction

The economic crisis of the thirties, the second world war and the period of reconstruction immediately after the war, all stimulated a more active and larger role of the government. Keynesianism became the dominant economic ideology and theory. During these decades, official national accounting started to flourish (see Bos, 1992a). International guidelines were developed and national accounts figures were increasingly used for monitoring and managing the government and the national economies.

Since the eighties, the tide has turned: Keynesianism is out, communism has become an anachronism and the market-ideology has won: the government should privatize, decentralize and deregulate a major part of its tasks, should cut down on subsidies, taxes and social transfers and should reduce its deficits and debts.

What are the consequences for the national accounts of this turning of the tides? We will distinguish three types of consequences:

- changes in the demand for national accounts statistics (subsection 6.2);
- changes in the inputs for the national accounts statistics (subsection 6.3);
- changes in the production and management of the national accounts statistics (subsection 6.4).

6.2 The demand for national accounts statistics

The demand for national accounts statistics will change due to the

turning of the ideological tides but not dramatically. National accounts statistics will maintain their role as internationally standardized overview-statistic as there is no other statistic which can play this role. This role is indispensable for the government and all other parties interested in statistical information on national economies, e.g. for financial investors, the political parties not in the government and the international organizations. In fact, globalization will increase the need for solid and comparable national accounts statistics (see section 3).

Nevertheless, two types of changes will occur. The first change is that the national government becomes less important as customer of national accounts statistics, while other customers like national and international companies and international organisations become more important. These other customers have also often somewhat different preferences for statistics than the national government, e.g. for companies detailed supply and use tables are important because they can reveal market shares and market opportunities.

A second change is that the statistical preferences of the national government are likely to change. The national accounts statistics are less important as a tool for macro-economic stabilization policies. They should therefore address the new policy issues, like:

- the link between the economy and the environment;
- privatization, deregulation and decentralization;
- globalisation and regionalisation;
- the costs and benefits of specific infrastructural works, e.g. railtracks for high speed trains, the extension of airports or the construction of the Channel tunnel.
- the costs, financing and accessibility of health care in view of an aging population;
- the costs, financing and accessibility of social and private insurance.

6.3 The inputs for the national accounts statistics

The turning of the ideological tides has also affected the inputs for the national accounts: they will decrease due to deregulation, decentralization and privatization.

As part of deregulation by the government, the respondent burden of statistical surveys and administrative procedures should be limited. This will often be attained by reducing the number, frequency and detail of surveys and administrative procedures. This will often imply a reduction in the information available for compiling the national accounts statistics. The respondent burden can also be limited by automated reporting systems connected to the respondent's administration, by combining various surveys or by combining statistical surveys and administrative procedures. In Europe, an important example of deregulation was the replacement of the administrative formalities at the intra-EU customs borders by the introduction of the Intrastat-system for both tax and statistical purposes (see subsection 4.3).

As part of decentralisation of the government, central administrative regulations and practices are likely to be abolished or become less strict. As a consequence, administrative information at the central government on the local government units will decrease, e.g. some type of information will disappear, other information will arrive later or will be of lesser quality due to less strict supervision. Furthermore, the way the administrations are kept become more heterogeneous and the willingness of local government to provide information to a (central) statistical office can decline. The implication for the national accounts is that its information on the local government will decrease in quantity and quality. This is even more a pity as local government is becoming more important by taking over tasks of central government.

Privatization of public corporations and government units can also reduce the willingness to disclose information to statistical offices and to meet statistical demands. The work involved in meeting the

statistical demands is an easy victim for reducing the costs of the privatized units. Privatization will therefore often decrease the national accountants' information on the privatized corporations and units.

6.4 The production and management of national accounts statistics

6.4.1 Efficient production

The turning of the ideological tides influences also the production and management of official national accounts statistics and statistical offices. All over the world, official statistics are being challenged to become more *efficient and more effective* in meeting data demands and raising resources. *Official national accounts statistics becomes thus more a product which should be produced efficiently, be improved continuously in view of changing data demands and be marketed actively.*

Efficient production of official national accounts statistics requires:

- regular investments in improving the compilation techniques and the skills and knowledge of the compilers;
- good communication and coordination with statistics and administrative data sources used as inputs for the national accounts statistics;
- an optimal balance between the efforts of processing and the relative importance of the outputs.

We will shortly explain what these requirements can imply for making and keeping efficient the compilation of national accounts statistics.

Investments in the compilation techniques and the compilers refer to further automation, critical evaluation of present compilation techniques, consideration of using alternative compilation techniques, more international sharing of knowledge on best practices, special

courses for training statisticians and targeted research on specific compilation issues.

Automation, evaluation, courses and research should preferably be taken up internationally: development of international standard software for compiling national accounts statistics, audits on the efficiency of the compilation techniques by international consultants, international courses on simple as well as advanced national accounts compilation techniques and an international research programme on national accounts compilation issues. Such an international approach can exploit best all available know-how, can profit from the economies of scale involved and avoids doing double-work (see also Franz, 1996). This international approach can also be partly run on a commercial basis, i.e. by companies or national statistical offices selling their software, audits and courses to statistical offices and other compilers of national accounts statistics.

At present, the international approach on improving compilation techniques is limited to some beginners' courses on compiling the national accounts (e.g. the Dutch course on compiling the national accounts in practice) and the writing of handbooks commissioned by the international organizations. A weakness of this practice is that it is mostly based on the willingness of statistical offices to free temporarily one or more of their experts from their normal duties. This willingness is a clear risk for the statistical office involved: their best experts are also the backbone of the national compilation process, they are often working at the executive level and they are very difficult to replace, in particular in the short run. *For improving compilation techniques internationally, a less piece-meal and ad hoc basis is therefore urgently needed.*

The building-bricks for constructing national accounts statistics are various other statistics and administrative data sources. Efficient compilation of national accounts statistics therefore requires an efficient relationship with these data sources. This relationship is not

a one-way relationship, as the national accounts and its input-statistics share a lot of common interests. For the national accounts, an input-statistic is often not only an input but reflects also a user-group for the national accounts statistics. For the input-statistic and its data-users, the national accounts is not only a data-user but also a frame of reference to put the statistic in a national perspective, e.g. to express value added in construction as a percentage of GDP. In fact, both the input-statistic and the national accounts statistics may have common users.

To profit optimally from the joint interests, good communication and coordination are required on concepts, classifications, timing, formats of transferring data, etc. National accountants should clarify why and how they transform the data from the input-statistic into national accounts data. The processing of the data should also be coordinated, because some checks can best be done in compiling the input-statistic and some others in compiling the national accounts. Furthermore, national accountants may perform some plausibility-checks that have already been done or they may assume that some checks have been made that in fact have not. For most common input-statistics (e.g. Labour Force Survey, Family Expenditure Survey, Industry statistics), international quality standards that are regularly monitored seem to be an efficient solution.

Joint statistical products could also be developed, e.g. in the form of a module or satellite account. Examples of these are a module linking national accounts statistics and environmental statistics, a health care module, a Research and Development module or a social policy module (see e.g. Gorter and van der Laan, 1992, de Haan, Keuning and Bosch, 1993, Bos, Hollanders and Keuning, 1994 and Bos, 1996a). The joint products can also be a simple table showing the links and differences between the national accounts statistics and the input-statistic.

Efficient compilation of national accounts statistics also requires a good balance between the efforts of processing and the outputs, i.e. the

national accounts statistics and their uses. For estimating important parts of the national economy, sizeable compilation efforts are justified. However, not much compilation efforts should be put in estimating accurately a very limited part of the national economy which does not serve any special (important) data needs. There is always a tendency to focus the compilation efforts on parts of the economy for which already good data sources exist and to estimate and publish for these parts statistics at a very detailed and disaggregate level. At the same time, often few efforts are spent on quantitatively or politically important parts of the economy on which solid information is relatively scarce. This practice is not efficient in view of the outputs.

Similarly, there is often a tendency to balance the efforts in view of old data needs and to forget to serve and explore new data needs. For example, disproportionate attention is often paid to compiling statistics on manufacturing compared to statistics on services. In fact, efficient compilation should be biased towards measuring changes in the economic and institutional structures: even if these changes do not represent relatively large amounts of money, they are often the messengers of bigger changes that are still to come and a proper and early signalling of changes should be a major task of national accounts statistics.

Even with extra efforts, the accuracy of national accounts statistics on parts of the economy on which quantitative information is relatively scarce and on recent changes will be relatively low compared to the accuracy for other parts. Nevertheless, the value added to users will be relatively high: it provides the best estimate that can be made and has a high news value.

Typical national accounts compilation problems have a huge correlation with important policy issues. This applies e.g. to estimates for small enterprises (how well are they doing compared to the bigger ones?, are they the source for economic growth and innovation?) and underreporting of incomes, employment and sales (all the black economy

issues). These problems should not be a source of shame for national accountants, but should be regarded as a challenge with high news value. Separate publications of best estimates on these issues should even be considered. Cooperation with other parties interested in this output (e.g. a Ministry, a research institute, the tax authorities, etc.) can help financing proper estimates, can help exploiting data and know-how and can result in better and more tailor-made national accounts statistics.

6.4.2 Improving the product

In section 4, it was described how European unification has been improving the official national accounts as a product by:

- *increasing the international comparability of the national accounts statistics* (e.g. by audits and by setting minimum standards on the quality and coverage of the inputs for the national accounts);
- *extending the product range of the national accounts statistics* (e.g. with quarterly accounts, supply and use tables, balance sheets, good linkage to employment statistics, etc.);
- *increasing the international comparability of the product range.*

These improvements do not only serve international data needs but also national data needs, as international comparison is often essential for understanding what the national statistics indicate.

In the recent guidelines and handbooks drafted under the auspices of the international organizations we can also detect three other important suggestions how to further develop the present national accounts statistics.

The first suggestion is that more attention should be paid to *compiling and presenting national accounts figures for 'special' circumstances*. This suggestion can be detected in the handbooks that have appeared recently for national accounting under high inflation and

for countries in transition (the former-communist countries in Eastern Europe).

The second suggestion is that more attention should be paid to *servicing specific purposes and to establish links with other statistics*. In the SNA93 and the ESA95 this is reflected in recommending the flexible use of the classifications in the central framework and the development of Social Accounting Matrices, satellite-accounts and supplementary tables. In this way, links can be established with non-monetary data (e.g. on the environment, education, health care and the population), with micro-data (e.g. household panel-data, household budget survey data and labour force survey data) and with administrative data (e.g. business accounts, government accounts and VAT-registers). For establishing these links and for servicing specific data needs, the use of alternative concepts can be required, e.g. tax concepts, concepts used in national economic policy or concepts for applied economic analysis (e.g. gross capital stock for productivity analysis or introducing consumer durables as a memorandum item on the balance sheet) (see for more examples, ESA95 paras 1.15-1.23 and para 9.51).

The third suggestion is that more attention should be paid to *giving guidance to data users about the proper use and misuse of national accounts figures*. The SNA93 and ESA95 contain already some guidance in the introductory and other chapters, e.g. explicit warnings that GDP and National income are not welfare measures. The ESA95 chapter on the input-output framework (drafted by the present author) is an effort to provide simultaneously guidance to data compilers and data users. Attention is paid to the statistical and analytical purposes of input-output tables, to alternative calculations on the basis of these tables, to specific types of analysis served by these tables, to data problems in compiling these tables, to national accounts conventions crucial for a good understanding of these tables and to modifications to serve better some specific purposes. This approach should be elaborated and extended to the sector accounts and other parts of the national accounts.

National accounts figures reflect the data sources, statistical techniques and compilation strategies used. Providing information on these and their consequences for alternative types of use is therefore indispensable for a proper use of national accounts figures. Providing such information will also be a strong stimulus for further improving the international comparability of the national accounts statistics.

A lot of systematic research is required for investigating the consequences of alternative concepts and alternative estimates for various types of use (see also Richter, 1994 and Bos, 1994a). An example of specific user-oriented research is Bos (1992b), which focuses on the choice between net and gross figures of income and value added.

A systematic investigation of the links between economic theory and national accounting concepts is important to further develop and understand the national accounting concepts and to clarify the link with economic theory to those familiar or working with economic theory. Examples of this type of research are Bos (1993, 1995, 1996a and 1997)

Providing guidance to users also implies that the presentation of national accounts statistics should be straightforward and simple (e.g. distinguishing only two main sets of statistics: the sector accounts and the input-output framework) and not leaving too many, only slightly different, options open. For example, there is a tradition of emphasizing the subtle differences between Net Domestic Product at factor cost, Net Domestic Product at market Prices, Gross Domestic Product at factor cost, Gross Domestic Product at market prices, Gross National Income at market prices and Net National Income at market prices. However, for most users, these differences are irrelevant: they only want to use what they always used or what is the best according to official or international standards. Furthermore, in most cases, the numerical differences in terms of growth are marginal and within the bounds of statistical insignificance. By stressing these 'bookkeeping' differences, attention has been drawn away from the real content of national accounts statistics and national accounts has come to be

regarded as an unattractive and inaccessible subject.

Paying more attention to using national accounts figures for specific purposes and for specific circumstances will also raise four other issues. Firstly, some of the present core-concepts and classifications will turn out not to be the best for most purposes and most common circumstances. These should thus be changed. Candidates for change are e.g. the present conventions to ignore interest payments in valuing non-market output (this seriously underestimates the costs of government output) and to value owner-occupied dwellings at market rents (this distorts the analysis of personal income and expenditure) (see Bos, 1995).

Secondly, when for some specific purposes or circumstances the core-concepts induce serious misuse, internationally agreed upon modifications can be introduced that pertain only to such purposes or circumstances. This can apply e.g. to treating military expenditure as final expenditure (this shows military expenditure as a stimulus for economic growth and not as a burden for economic growth).

Thirdly, for some specific purposes and circumstances a complete or extended system of national accounts is definitely required. This applies e.g. to the convention to ignore the decrease in the value of subsoil-assets in measuring production and income. This limitation of the production and income concepts in the international guidelines is best overcome by also taking into account the balance sheet and net worth: depleting subsoil-assets will turn up as a reduction in the net worth of e.g. an oil producing country. The same applies e.g. to holding gains (an other changes in the value of assets accounts should be drawn up) or to environmental damage (a satellite on the link between the environment and the national accounts can best deal with this data need).

Fourthly, a major merit of the present national accounts conventions is that they require only a limited amount of modelling (e.g. in

estimating capital consumption via the Perpetual Inventory Method or in estimating the value of the services of owner-occupied dwellings). However, for a balanced comparison of national economies sticking to 'statistics' does not always suffice. For example, comparing social benefits from one country to another is seriously distorted as in some countries social benefits are net of taxes and social premiums while in others still taxes and social premiums are to be paid. Correcting for this difference between net and gross social benefits amounts to 'modelling', as only sophisticated calculations can do justice to the common fact that the taxes and social premiums depend also on many individual circumstances (e.g. being married, age or sex). Similarly, for calculating more welfare oriented or forward-looking concepts or for forecasting, modelling is required. So, for various data needs, national accounts statistics need to be supplemented with model-estimates.

As a consequence, national accounts statistics and model-estimates should be regarded and developed more as joint and complementary products. Only by joining efforts, national accountants can avoid some types of serious misuse and meet important data demands. Nevertheless, a clear division of tasks with model-builders is wise in order to stress the differences between national accounts statistics and model-building, to keep an independent position and in order to profit from efficiency gains of specialization. Modelling results should also be presented differently in the national accounts, namely as part of satellite accounts and not as part of the core accounts.

6.4.3. Marketing of the national accounts statistics

Like most public services, national accounts statistics are commonly not well marketed. The trend towards more market-oriented government reinforces a drastic improvement in the marketing of the national accounts. This marketing can take various forms: improve the presentation of the national accounts statistics, link the national accounts statistics better to specific data users and current popular

issues, give courses for users of national accounts statistics and ensure all kinds of publicity.

The marketing efforts should stress the central purpose of the national accounts statistics (to provide an overview of the national economy), make the national accounts an attractive statistic by presenting concrete cases and point to the value added of national accounts statistics to efficient and democratic-decision-making. This value added is often forgotten by the general public and politicians, while being taken for granted by the statisticians themselves. Here is clearly a task for marketing. For example, it should be stressed that the costs of producing national accounts statistics are relatively small compared to the costs of making wrong or untimely decisions (e.g. misestimates of tax revenues, overestimating the importance of an industry for the national economy, misjudging the seriousness of an economic crisis). For the EU-Member States, the costs of producing national accounts statistics are only a very small fraction of the contributions to be paid to the EU on the basis of GNP estimates and the political importance of the national accounts figures for the European Monetary Union is very great. A good example of the marketing of statistics is the work by Eisner (1989, 1992 and 1994): he has entered public debates on various economic issues (like the government deficit) by stressing what we can learn from the statistics.

7. Conclusions

In this paper, we have investigated the future of the national accounts in view of four general trends: globalisation, European unification as an example of regionalisation, automation and more market oriented-government.

National accounts statistics will continue their role as a central international overview-statistic on national economies. Our perspective on the future is a mixture of exploiting present and new potentials and coping well with dangers:

- globalisation and regionalisation will increase the political use of national accounts figures. This reinforces requirements on international comparability and standardization as evidenced by the European experience.
- globalisation and more-market oriented government will pose serious difficulties for the quality and completeness of the statistics and administrative data sources used for compiling national accounts figures. A pro-active response is essential for statisticians. The possibilities for national accountants may increase due to automation, putting minimum standards on the inputs for the national accounts statistics to increase their international comparability and advances in national accounts compilation techniques.
- more-market oriented government can stimulate the development of more efficient, effective and attractive national accounts statistics that appeal to a wide range of data users. However, it can also result in cutting down the resources for national accounts statistics and its major inputs below a minimum-level. National accounts statistics will then be in a type of liquidity trap: resources are not enough to meet a minimum standard of reliability, to make national accounts statistics more attractive and to find new users; the potentials of the national

accounts statistics are then trapped.

The major challenges for the national accountants are to clarify the need for good-quality national accounts statistics, to make national accounts statistics more attractive, to improve compilation methods and concepts, to give guidance on the proper use and misuse of national accounts statistics and to find the proper balance between the standardization required for international comparability and credibility and the heterogeneity required to meet specific purposes and circumstances.

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