

CHAPTER 7

A NOTE ON THE IMPLEMENTATION OF A NEW SYSTEM OF ECONOMIC ACCOUNTING

7.1 Background

A new reference work for national economic accounting was published by a consortium of international organizations⁵⁴⁷ in 1993. Referred to as the 1993 SNA (System of National Accounts), it updated and replaced a previous (1968) guide. The publication of the new SNA marks one of the most important events in national accounting in the past several decades. It better reflects important economic realities that have developed since 1968. It greatly increases the integration and coherence of economic statistics generally. It simplifies accounting practices by articulating the general principles underlying them, and it clarifies specific issues by providing rationales based on these general principles. As a result of all of these improvements it also increases the analytical power of the full range of economic statistics, and increases their potential utility to analysts and to the policy makers they advise.

National accountants and experts in related fields from around the world participated in the decade-long process of developing the new system, which was unanimously recommended to the United Nations Economic and Social Council by members of its Statistical Commission at its twenty-seventh session, held in New York from 22 February to 3 March 1993. Since then statistical offices around the world have embarked on the challenging task of implementing the new recommendations in the officially published statistics of their respective countries. Within the ECE region, the countries of eastern Europe, the Baltic states and the Commonwealth of Independent States were early adopters, as many of them were already in the process of modifying their statistical systems to meet the needs of a market economy when the new standards were published. Canada, Denmark, Finland, Norway and the United Kingdom implemented the new system two to three years ago, while the United States and most of the countries of

Western Europe switched to the new system in 1999.⁵⁴⁸ Given that virtually all countries of the ECE region are now compiling their official national accounts according to the new system, it seems appropriate at this time to provide readers of the *Survey* with an overview of the changes.

7.2 Responding to new economic realities

National economies have evolved substantially since 1968, and in so doing have created increasing demands for economic statistics to reflect the new realities. Inflation has become a greater concern than in the earlier period, and a revaluation of assets account has been defined to help trace its impact. The role of governments has changed in most countries, especially in the formerly centrally planned economies. A new classification structure for government expenditures and outlays has been introduced, while a new aggregate measuring actual final consumption of households distinguishes the consumption by households from the financing of that consumption. It includes spending which, although financed by governments and non-profit institutions serving households, directly benefits individual households or persons. This sheds additional light on government activity. The services industries in most economies have grown relative to the goods producing industries, and in many economies now account for more than half of value added. While the proper recording of services in the national accounts has always been challenging, the new system simplifies their treatment by showing how certain distinctive characteristics of services demand specific approaches. Financial services in particular have mushroomed in recent years, and the new system articulates criteria for delineating the financial services sector, and for classifying the profusion of financial instruments that have emerged. Finally, by broadening the asset boundary, by establishing a new classification structure for assets, and by providing a framework for environmental satellite accounts, the 1993 SNA responds

⁵⁴⁷ United Nations, et al., *System of National Accounts 1993* (United Nations publication, Sales No.E.94.XVII.4). This is published under the auspices of the Inter-Secretariat Working Group on National Accounts (ISWGNA), consisting of the Statistical Office of the Commission of the European Communities (Eurostat), the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), the Statistical Division (UNSTAT) and regional commissions of the United Nations Secretariat, and the World Bank.

⁵⁴⁸ Countries have frequently given the new implementations names that differ from "1993 SNA". These different implementations reflect the unique practical and legal circumstances of each situation, but they all draw upon the 1993 SNA for guidance and are broadly consistent with it. For example, within the European Union the new accounts have been labelled ESA 95 (European System of Accounts).

to the growing demand to incorporate environmental criteria in economic analysis.

7.3 Harmonizing role of the 1993 SNA

In addition to responding to new economic realities, the 1993 SNA represents a major step forward in terms of improving the consistency and coherence of a broad range of economic statistics. As a result, "The classifications and concepts of the central framework are internally more closely linked up with each other and more fully harmonized externally with standards of related statistical systems than in the 1968 SNA. It more fully integrates production, income, capital and financial accounts and balance sheets, and ... describes in detail the links between the SNA and the related statistical system on balance of payments prepared by the International Monetary Fund (IMF)."⁵⁴⁹ The IMF is also in the process of revising their Monetary and Financial Statistics Manual⁵⁵⁰ and their Government Finance Statistics Manual with a view to harmonizing them as fully as possible with the 1993 SNA.⁵⁵¹ These manuals are intended as reference volumes to offer guidelines for identifying, classifying, and recording stocks and flows of financial assets and liabilities, and for compiling and presenting statistics for the analysis of fiscal policy.

Other examples of harmonization include the United Nations International Standard Industrial Classification of All Economic Activities (ISIC), the industrial classification that is used in the SNA. The establishment as described in ISIC is also the statistical unit used to compile the production accounts by industry that make up supply and use tables of the SNA, the concept of the establishment being the same in both the SNA and ISIC. The NACE system used by countries in Europe to classify industries is a more detailed elaboration of ISIC, and is also consistent with the SNA. The International Labour Organisation (ILO) has issued revised standards on labour statistics that define employment in a way that is consistent with the boundary of production in the SNA. Another example is provided by the revised Handbook on Agricultural Accounts, prepared by the Food and Agricultural Organization of the United Nations (FAO), which has been brought into line with the treatment of agricultural products and activities in the SNA.

While this list of harmonized international statistical systems is not exhaustive, it is clear that the 1993 SNA has become the reference point for national and international agencies involved in harmonizing the various statistical systems with each other and with the SNA.

7.4 Quantitative impact of the revisions

As indicated above, adapting statistical systems to new economic realities and improving the integration and coherence among them were among the most important goals of the 1993 SNA. The actual impact of these changes on aggregates such as GDP is perhaps of secondary importance compared to the increased analytical richness the new system provides. Nevertheless, there is an interest among users of economic statistics in the impact on GDP, especially when it enters into formulae that are used to allocate various payments among countries, or to determine eligibility for certain privileged memberships or treatments.

TABLE 7.4.1

Starting dates for 1993 SNA-based national accounts, by country

Country	Date	Country	Date
Western Europe		Eastern Europe (continued)	
4 major countries		Czech Republic	1990
France	1978	Hungary	1991
Germany	1991	Poland	1992
Italy	1982	Romania	1990
United Kingdom	1946	Slovakia	1990
13 smaller countries		Slovenia	1990
Austria	1995	The former Yugoslav	
Belgium	1985	Republic of Macedonia	1990
Denmark	1966	Yugoslavia	1994
Finland	1975	Baltic states	
Greece	1995	Estonia	1992
Ireland	1990	Latvia	1990
Israel	1995	Lithuania	1990
Luxembourg	1995	CIS	
Netherlands	1995	Armenia	1990
Norway	1978	Azerbaijan	1990
Portugal	1988	Belarus	1990
Spain	1995	Georgia	1990
Sweden	1993	Kazakhstan	1990
North America		Kyrgyzstan	1990
Canada	1961	Republic of Moldova	1990
United States	1959	Russian Federation	1990
Eastern Europe		Tajikistan	1990
Albania	1990	Turkmenistan	1992
Bosnia and Herzegovina	1998	Ukraine	1990
Bulgaria	1991	Uzbekistan	1990
Croatia	1995		

Source: UN/ECE secretariat.

In addition to compiling their current statistics according to the new system, countries have invariably reworked some range of their historical statistical record to be consistent with it. Table 7.4.1 indicates how far back each country has reworked its statistics at the present time. Many countries are implementing their revisions in stages, however, so more historical data may become available in the future. These reworked historical records provide an opportunity to assess the difference between GDP compiled according to the new and old systems. It should be cautioned, however, that in addition to converting to the 1993 SNA, such historical revisions usually entail incorporation of

⁵⁴⁹ United Nations, *System of National Accounts 1993*, op. cit., annex I, para. 2.

⁵⁵⁰ www.imf.org/external/pubs/ft/MFS/manual/index.htm.

⁵⁵¹ www.imf.org/external/pubs/ft/gfs/manual/synopsis.htm.

TABLE 7.4.2

Differences between the new and the old estimates, 1991-1997
(Percentages)

	1991	1992	1993	1994	1995	1996	1997
France	1.6	1.8	2.1	1.5	1.2	1.0	1.2
Germany	3.0	2.5	2.3	2.0	2.4	1.8	1.4
Italy	1.5	1.6	1.5	1.3	0.8	1.2	1.2
United Kingdom	1.8	1.7	1.6	1.7	1.6	1.7	1.6
Austria .....	..	..	..	..	2.0	1.6	0.3
Belgium	0.4	0.5	0.2	0.2	0.8	0.3	0.6
Denmark	5.7	5.8	4.9	6.7	6.4	7.4	..
Finland	1.5	2.2	2.2	2.0	2.1	2.4	1.3
Greece .....	..	..	..	..	1.3	0.8	0.8
Ireland	3.1	2.0	1.7	0.1	0.2	0.4	1.8
Luxembourg .....	..	..	..	..	3.8	3.2	6.4
Netherlands .....	..	..	..	..	4.1	3.9	4.1
Portugal .....	..	..	..	..	1.9	1.7	2.3
Spain .....	..	..	..	..	4.4	4.6	4.8
Sweden .....	..	..	3.2	3.7	3.4	3.8	3.8
Canada .....	..	1.0	1.2	1.7	2.7	4.0	4.5
United States	1.2	1.2	1.3	1.5	1.8	2.0	2.3
Euro-11 .....	..	..	..	..	1.9	1.7	1.7
EU-15 .....	..	..	..	..	2.9	1.9	..

Source: European Union countries: C. Ravets and C. Hublart, Eurostat, "Le SEC 95, Nouveaux concepts et premiers résultats", communication présentée au Huitième Colloque de Comptabilité Nationale, Association de Comptabilité Nationale (Paris), 19-21 January 2000. Canada: L. Kishori (ed.), "The 1997 historical revision of the Canadian system of national accounts, record of changes in classification of sectors and transactions, concepts and methodology" and "The 1997 historical revision of the Canadian system of national accounts, current price gross domestic product, 1961-93, a statistical representation from the old to the new", *Statistics Canada* (Ottawa), 1998 and UNECE secretariat. United States: Bureau of Economic Analysis (BEA), United States Department of Commerce.

improved statistical sources and the revision of constant price estimates to a new base year. Disentangling these various effects can be problematic. All that can be done here is to present the overall impacts on GDP in current prices, and to cite some of the most important innovations in the 1993 SNA contributing to them.

This analysis of revisions to GDP will focus on the ECE countries of western Europe and North America. Most of the other member countries of the ECE followed the Material Product System (MPS) for centrally planned economies before converting to the 1993 SNA. It is beyond the scope of this note to analyse differences between the MPS and the 1993 SNA.

Table 7.4.2 shows the overall revisions to current price GDP for 15 countries of the EU and for the Euro-11 and EU-15 aggregates, as well as for Canada and the United States. The revisions are stated as a per cent of the old (1968 SNA or ESA 79) estimate. It is clear from the table that the revisions have been uniformly upwards and have been in the range of 2 to 3 per cent in the last three years for the aggregate regional measures of GDP. A few countries, notably Denmark, Luxembourg, Spain and Sweden, recorded upward revisions substantially higher than this range. It is not clear from this table, however, how much of

the revision is due to the new concepts embodied in the 1993 SNA, and how much is due to use of better data sources.

Some countries have provided estimates of how much of the revision comes from new concepts and how much from better statistical sources, at least for total GDP, and these results are shown in columns 2 and 3 of Table 7.4.3. The table also shows the size of the overall revision for some of the major components of expenditure. This table indicates that statistical and conceptual sources of the revision to total GDP are of roughly equal importance, and both tend to operate in an upwards direction, although in each case there are one or two exceptions.

Gross fixed capital formation is the expenditure component exhibiting the largest overall revisions, again in an upward direction. The new guidelines have broadened the concept of investment to include several types of expenditure that were not formerly considered to be capital spending. The most important of these additions is spending on computer software, including own account production. Other changes include extension of produced assets and gross fixed capital formation to include expenditure on mineral exploration, entertainment, literary or artistic works, expenditure by the military on structures and equipment, except weapons, and several other categories of expenditure.

Imports and exports were both revised upwards, because of definitional and valuation changes. Trade flows now include goods exported and imported for further processing, and are valued to include transport and insurance costs to the border of the exporting country. However, because the revisions to exports and imports are generally similar, the overall impact on GDP of the revision to net exports is small.

Expenditure on final consumption includes household expenditure, government expenditure, and the expenses of Non-profit Institutions Serving Households (NPISH). While it has been revised upward for a variety of statistical and conceptual reasons, the increase has been smaller than that for total GDP. Perhaps of more interest is a new treatment that decomposes this aggregate either on the basis of who pays for the goods and services involved, or on the basis of who actually consumes them. Actual final consumption by households includes, in addition to direct consumption expenditures by individuals, the expenses of NPISH, as well as government expenditure on individually deliverable services such as health, education, etc. Actual final consumption of government is defined as government expenditure on collectively deliverable services such as security and defence, law and order, etc. Overall, this treatment makes it easier to compare countries where, for example, responsibility for delivery of health care is split differently between the private and public sectors.

TABLE 7.4.3
Differences between ESA 95 and ESA 79, various aggregates, 1995
(Percentages)

	Gross domestic product			Expenditure on final consumption	Gross fixed capital formation	Exports	Imports
	Total	Concepts	Statistical source				
France	1.2	0.2	1.0	1.2	6.7	-3.2	1.0
Germany	2.3	1.1	1.2	1.3	6.4	5.1	5.5
Italy	0.9	1.7	-0.8	-0.4	7.0	-1.7	-1.5
United Kingdom.....	1.6	0.8	0.8	1.0	4.9	-	-
Austria	2.0	..	..	2.0	3.5	0.3	1.3
Belgium	0.8	1.6	-0.8	-2.0	14.3	5.7	6.6
Denmark	6.4	4.1	2.3	4.3	17.1	5.3	5.8
Finland	2.1	..	..	0.5	12.9	1.0	2.2
Greece	1.3	..	..	3.3	..	12.7	1.2
Ireland	0.2	-3.0	3.2	5.1	5.8	0.3	6.9
Luxembourg	3.8	..	..	7.2	-5.7	11.2	12.3
Netherlands	4.1	3.3	0.8	2.7	13.7	12.8	15.8
Portugal	1.9	..	..	0.3	3.8	0.9	-1.2
Spain	4.4	1.5	2.9	3.2	10.3	-0.6	0.6
Sweden	3.4	2-2.5	1-1.5	1.8	11.1	1.6	1.1
Euro-11	1.9	..	..	1.1	7.2	2.5	4.1
EU-15	2.0	..	..	1.1	7.2	2.2	3.4

Source: As for European Union countries in table 7.4.2.

It should be emphasized, however, that the above describes only a few of the largest revisions. Many other changes have taken place and the importance of the individual changes has varied from one country to another. Revisions for Canada⁵⁵² and the United States⁵⁵³ are broadly similar to those described above. But in the United States for example, a change whereby government employee retirement plans are now treated similarly to private pension plans has increased personal saving and decreased government saving by the same amount. Since the changes are offsetting they do not affect GDP, but they do show that the puzzling decline in the personal savings rate to near-zero values in recent years was not so severe as originally thought. The personal savings rate previously fell from a peak of 9.0 per cent in 1982 to 0.5 per cent in 1998. With the changes it now falls from 10.9 to 3.7 per cent.

Other changes introduced by many countries include, but are not limited to, new ways of estimating the production and consumption of Financial Intermediation Services Indirectly Measured (FISIM),

and the introduction of chain price and volume indexes to measure inflation and the "real" value of many aggregates. Readers interested in the detailed and specific changes for any country are encouraged to consult studies prepared by analysts within the statistical system of those countries.⁵⁵⁴

⁵⁵² L. Kishori (ed.), "The 1997 historical revision of the Canadian system of national accounts, record of changes in classification of sectors and transactions, concepts and methodology" and "The 1997 historical revision of the Canadian system of national accounts, current price gross domestic product, 1961-93, a statistical representation from the old to the new", *Statistics Canada* (Ottawa), 1998.

⁵⁵³ E. Seskin, "Improved estimates of the national income and product accounts for 1959-98: results of the comprehensive revision", *Survey of Current Business*, December 1999.

⁵⁵⁴ In addition to the publications previously cited, the reader can refer to: *Belgium*: Banque Nationale de Belgique, Institut des Comptes Nationaux, Services statistiques financières et économiques, *Comptes nationaux 1998, Partie I, Estimations des agrégats annuels* (Bruxelles); *France*: F. Lequiller, "Comptes nationaux, la nouvelle base 95", *Courrier des statistiques*, nos. 87-88, décembre 1998; *Finland*: Statistics Finland, "Tilastokeskus - revised national accounts", 26 August 1999, website (www.stat.fi/tk/to/nettien.html); *Germany*: Statistisches Bundesamt, "Revision der Volkswirtschaftlichen Gesamtrechnung 1999 - Anlass, Konzeptänderungen und neue Begriffe", *Sonderdruck aus Wirtschaft und Statistik 4/1999* (Wiesbaden); *Netherlands*: G. Buiten, J. van den Hof and P. van de Ven, "Revision of Dutch national accounts: first results and backgrounds", Statistics Netherlands, Division Presentation and Integration, Department of National Accounts, 24 August 1999.