

## FEATURE

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Co-operation and Development<sup>1</sup>**

# The revision of the 1993 System of National Accounts – what does it change?

## SUMMARY

Recent changes in the way the economy works require adjustments in how statistics are compiled, both in the classifications and the theoretical frameworks used to run statistical surveys and produce macroeconomic statistics. In 2003, the United Nations Statistical Commission officially called for an update of the 1993 System of National Accounts (SNA) to bring this pre-eminent international statistical standard into line with the new economic environment, advances in methodological research and the needs of users. The more salient changes to the 1993 SNA relate to the recording of pension schemes, the role of research and development as investment and military expenditure as capital formation, and the treatment of trade in goods for processing. This article highlights such changes and provides, where possible, a preliminary evaluation of the possible impact on these key variables.

It is quite clear that over the last 15 years the way in which the economy works has changed quite substantially. The increasing role of information and communication technologies in production processes, the growing role of intangible assets and services activities, the globalisation of national economic systems and reforms in the management of the welfare state have produced radical changes in several respects. These changes require adjustments in the way in which statistics are compiled, both in the classifications and the theoretical frameworks used to run statistical surveys and produce macroeconomic statistics.

After the 2002 conference of the International Association of Official Statistics, which was devoted to 'Official Statistics and the New Economy', the Organisation for Economic Co-operation and Development (OECD) wrote to other international organisations proposing to launch an update of the 1993 *System of National Accounts* (1993 SNA). In 2003, the United Nations Statistical Commission (UNSC) officially called for an update of the 1993 SNA to bring this pre-eminent international statistical standard into line with the new economic environment, advances in methodological research and the needs of users. It was agreed that the update would not bring fundamental or comprehensive changes to the 1993 SNA which would impede its implementation. Generally, changes should be feasible to implement and there should be consistency with related statistical manuals.

The revision process is expected to end in March 2009, when the 1993 SNA Rev. 1 should be adopted by the UNSC. However, in early 2007, the UNSC agreed to a consolidated list of recommendations for changes to the 1993 SNA. Although most OECD member countries are not expected to implement these changes until 2012–14, it is important to understand what the revised system will look like and what impact the changes will produce on key economic variables, such as gross domestic product (GDP) and public deficit and debt. This article highlights some of the main changes to the 1993 SNA and provides, where possible, a preliminary evaluation of the possible impact on these key variables.

## Background

The National Accounts provide a systematic statistical framework for summarising and analysing economic events, and wealth of an economy and its components. Principal accounts record production, consumption, capital formation, the distribution of income to the factors of production (labour and capital) and the use of income. While complete balance sheets are compiled by relatively few countries, most OECD member countries have complete data for financial assets, fixed assets<sup>2</sup> and liabilities. Most OECD member countries also produce these statistics for some, or all, major institutional sectors as well as the economy as a whole.

Production, consumption, capital formation, exports, imports and stocks of fixed assets have price and volume

dimensions, and so volume and price indices can be compiled for these statistics. Volume estimates are used to measure growth free of the direct effects of inflation. Volume estimates of GDP<sup>3</sup> and its major components are the most commonly used national accounting statistics. Although GDP is not a measure of wellbeing, the volume measure of GDP per capita is often used as a surrogate.

The history of national accounting can be traced back at least as far as the 17th century, but the first true internationally accepted standard was the 1953 SNA. This was subsequently updated in 1968 and 1993. Inevitably, a national accounting standard must have conventions that are arbitrary to some degree. For example, the boundary of production excludes the production of services by households for own use; likewise, the asset boundary excludes goods used by households to produce these services even though they may be used for many years. The asset boundary also excludes expenditure on some things that are expected to produce benefits well into future, such as innovation, advertising and training.

As time passes, the economy and society evolve, past conventions are seen as inappropriate, methodological and theoretical developments occur and users' needs change, and so the national accounting standards must be updated from time to time or become obsolete. Following the major update in 1993, it was decided by the UNSC that it would be better to have smaller updates more frequently, but this did not work out and so another major update was needed.

Updating the SNA cannot be taken lightly. Any changes must be conceptually sound and consideration must be given to implementation around the world. To maintain international comparability, changes must also have wide international support. From the start, the UNSC emphasised the need for the broadest possible involvement of the global statistical community in the update project. The Intersecretariat Working Group on National Accounts (ISWGNA) – comprising the OECD, the Statistical Office of the European Communities (Eurostat), the International Monetary Fund, the United Nations and the World Bank – was asked to

organise and coordinate the update project, assisted in its work by a project manager and an editor. An Advisory Expert Group (AEG) on National Accounts, comprising 20 country experts from all regions of the world, was established to play a key role in the update. The AEG considers proposals for change and expresses its views, both in meetings (six so far) and in web-based written consultations.

There is the project website, maintained by the United Nations Statistics Division (UNSD) at <http://unstats.un.org/unsd/nationalaccount/snarev1.asp> which promotes transparency and the wide involvement of national accounts experts from all over the world. The website provides comprehensive and timely information related to the update, including the five-year work programme, the agreed list of update issues, related papers, recommendations of the AEG, comments by countries on the recommendations and links to related sites.

The timetable calls for two deliverables: the first, comprising the core chapters of the revised SNA, in 2008, and the second, comprising the remainder, in 2009. In the first phase of the update, 44 issues were identified that warranted consideration for substantive change, and 39 matters for clarification. All 44 substantive issues were then subject to research and debate by various task forces, working groups and committees in the second phase of the project. The groups then submitted reports of their findings on each issue to the ISWGNA and AEG for consideration at one of their meetings.

### Overview of the recommendations

As can be seen from the descriptions of issues in the full set of consolidated recommendations, the motivations to consider the agreed issues were diverse. The reasons included the need to: deal with economic issues that arose or became more prominent since the 1993 SNA was completed; remove inconsistencies in the 1993 SNA; harmonise the 1993 SNA with other manuals in the field of macroeconomic statistics; and proceed with the research agenda left at the end of the process leading up to the 1993 SNA.

The recommendations cut across almost all parts of the SNA, but they are concentrated in parts that deal with non-financial assets, financial services and financial instruments, the rest of the world (balance of payments) and government and the public sector. In other words, the majority of the recommendations relate to units and transactions that represent characteristics of an increasingly globalised economy, innovation in financial instruments and stronger interest in the sources of wealth and debt of the private and the public sectors.

Some of the recommendations affect major aggregates of the system, such as GDP and saving, as would be expected of an update intended to capture the evolving aspects of production, consumption and accumulation. Many other recommendations do not affect the major aggregates but reflect a range of other elements, including elaborations and clarifications of definitions and classifications.

### New recording of pension schemes

As a result of increasing longevity and low birth rates, many countries are experiencing increases in the average age of their population, with the expectation of further increases for many years to come. Among other things, this has major implications for the provision of pensions for retirees in future years. The 1993 SNA only gives a partial picture of the pension obligations of businesses and government, and it has been widely accepted that a fully comprehensive picture is needed.

The 1993 SNA makes a distinction between employer pension schemes and social security even though both are part of social insurance schemes. Employer pension schemes are viewed primarily as being a means of redistributing income over time for a single individual. Depending on the conditions of employment, an employee builds up a claim on his employer during his period of employment for income to be paid after retirement. Social security schemes, in contrast, primarily redistribute income among a set of individuals at a single point in time. It is this notion of redistribution between large sections of the population within the current period that leads to their funding on a pay-as-you-go basis.

Agreement has been reached on how to improve the recording of private employer pension schemes, but difficulty has been encountered in agreeing on the treatment of government employer pension

#### Box 1

##### Major changes in the 1993 SNA Rev. 1

The full set of consolidated recommendations can be found on the UNSD website at <http://unstats.un.org/unsd/nationalaccount/AEG/recommendations/fsr.pdf>

schemes because in some countries it is difficult to distinguish between them and social security schemes. Nevertheless, a compromise has been reached to maximise the international comparability of the resulting data.

#### Private pension schemes

The 1993 SNA states that the actual social contributions by an employer and employee in a period should be the amount actually paid into a pension fund. For a defined contribution scheme (an arrangement whereby the contribution is pre-defined, but the pension payment is not), this is correct and complete since the eventual payment depends only on the amounts set aside in a pension fund. For a defined benefit plan (an arrangement whereby the contribution by the employee and the pension payment are pre-defined, but the contribution by the employer is not), there is no guarantee that the amount set aside by the employer will exactly match their liability to the employee.

In consequence, a number of changes to the 1993 SNA in the case of defined benefit plans are being made. The level of the employer's contribution should be determined by assessing the increase in the net present value of the pension entitlement the employee has earned in the period in question, adding any costs charged by the pension fund for operating the scheme and deducting the amount of any contribution the employee makes. This amount must be determined actuarially, and while estimates cannot be made accurately for any individual, robust estimates can be, and are, made for cohorts of employees.

#### Government employer schemes

Considerable discussion focused on how to portray the pension entitlements of schemes for government employees given the diversity of funding arrangements across countries. It was finally agreed that the SNA should recommend that a standard table should be prepared in conjunction with the regular accounts showing the pension entitlements accruing to households for all pension schemes, regardless of the means of funding or the category of the unit bearing the responsibility to meet the obligations of the pension scheme. Countries will have flexibility about whether all of these schemes should be carried forward to the 'core accounts' (that is, whether the full increase in the entitlements will be shown as income and saving of households), but in cases where particular schemes are not carried forward, a reasoned explanation for why this is not done will be required.

Internationally agreed criteria for when a scheme might not be carried forward should be developed, but this might not be possible before the proposed adoption of the first part of the updated SNA text in March 2008. In this case, the search for the necessary criteria will form part of the research agenda.

#### Social security schemes

As part of the work to define precisely the format of the pensions table, consideration will be given to the desirability and feasibility of including information for social security schemes in the same or a similar table.

#### Quantitative impact

It is not possible at the moment to quantify the impact on the accounts of these changes. The impact is likely to vary considerably between countries, and depend on the composition of the different types of schemes within a country and the current treatment and the extent to which the recommendations are implemented in the core accounts in respect of government employer schemes. Compensation of employees and household saving could change (probably upwards) and gross operating surplus could change (probably downwards).

If government liabilities are recognised for unfunded employer defined benefit schemes for government employees, then the ratio of the SNA public debt to GDP could rise substantially, maybe by between 20 and 80 per cent. The impact on GDP and the SNA measure of public deficit will depend on whether the actual pension payments currently included in compensation of government employees are greater or less than the imputed contributions to the pension fund plus the imputed interest on previously unpaid contributions that will replace them when the change is implemented. Some non-EU countries, such as Australia and Canada, have already made this latter change.

#### Cost of capital services

Capital services provided by non-financial assets to the production process are not explicitly mentioned in the 1993 SNA. The OECD manual *Measuring Capital*<sup>4</sup> defines capital services as inputs that flow to production from a capital asset. When assets are used by their owner, the value of capital services appears implicitly as part of the gross operating surplus. It can be estimated as the sum of depreciation, expected real holding gains/losses and a

return to capital, similar in value to the cost of interest on the remaining value of the asset.

The recommendation begins by noting that capital services for assets used in market production are implicitly included within the 1993 SNA but are not separately identified. Given the importance of identifying them for productivity measurement and other analysis, a new chapter is being added to the updated 1993 SNA explaining the role and appearance of capital services in the system and stressing the desirability of calculating capital services, capital stock and consumption of fixed capital in an integrated and consistent manner. No changes will be made to standard entries in the accounts to show capital services but an explanation will be provided of how supplementary items or tables could be derived and presented. Hence, there is no recommendation to include capital services in the core accounts, but some countries may choose to include them as 'of which' items for gross operating surplus (or value added in volume terms).

#### Quantitative impact

None.

#### Research and experimental development

The 1993 SNA does not recognise research and experimental development (R&D) as capital formation, despite the fact that it is thought to be a major contributor to future economic growth. Instead, R&D conducted on own account is not recorded as output, and expenditure on R&D is recorded as consumption, with the result that GDP is understated. Stocks of R&D assets are not recorded in the balance sheet, hence the net worth of a country is also understated. Furthermore, the capital services provided by R&D assets are not recognised as an input in productivity estimation. None of this is an oversight. In fact, it was proposed to include the 'capitalisation' of R&D in the 1993 SNA, and it was only late in the day that the proposal was aborted because agreement could not be reached on how it should be implemented. There is no doubt that this is a difficult issue and history almost repeated itself in this update, but not quite. The following has been agreed:

- R&D should be treated as gross fixed capital formation in the SNA. It should be defined as in the Frascati Manual,<sup>5</sup> namely 'research and experimental development comprises creative work undertaken on a systematic

basis in order to increase the stock of knowledge, including the knowledge of man, culture and society and use of this stock of knowledge to devise new applications'. This definition should not be interpreted as including human capital as capital formation within the SNA

- by convention, since much R&D is carried out on own account, it should be valued at cost. In practice, the information collected in accordance with the Frascati Manual will provide estimates of R&D expenditure; discussion is ongoing to make adjustments to this manual to meet the needs of the SNA more closely. It is recognised that a detailed guide to implementation will be desirable to assist implementation of this recommendation
- all R&D expenditure that is sold or is expected to bring a benefit in the future to its owner (including for the provision of public services in the case of R&D undertaken by government) is included within the asset boundary. Only R&D that brings no economic benefit discernable at the time of its completion is excluded
- with the inclusion of R&D in the asset boundary, patented entities will no longer be separately identified as such in the system, but they will be subsumed into R&D assets

While there is strong support by countries for adopting these recommendations in the SNA, there is also considerable concern that it is premature to

do so because of technical difficulties that have yet to be overcome. In conclusion, research and development expenditure should be recognised, in principle, as part of capital formation. However, in recognising the difficulties to be overcome before this objective can be reached, satellite accounts will provide a useful way of working towards solutions that give the appropriate level of confidence in the resulting measures, and practical guidance on implementation will help to ensure international comparability. Therefore, the 1993 SNA Rev. 1 will describe the objective and its conceptual underpinnings, note the difficulties and provide links to work underway to overcome them and recognise that, for many countries, implementation will take some time. The ISWGNA will report periodically to the UNSC on progress and signal when widely accepted implementation guidelines are available.

Several OECD member countries have already compiled R&D satellite accounts, and EU countries as a whole are expected to begin doing so on an annual basis in a few years' time. The OECD is in the process of drafting guidelines on the compilation of R&D satellite accounts, for inclusion in an OECD *Handbook on Deriving Capital Measures of Intellectual Property Products*, to be released in 2008. This work will be carried out in close coordination with Eurostat.

#### Quantitative impact

The impact on GDP of the capitalisation of R&D depends on the relative size of R&D production to GDP, if and when

implemented. An approximate indicator of what this is likely to be is the ratio of gross domestic expenditure on research and development<sup>6</sup> (GERD) to GDP. This ratio varies considerably between OECD countries, from about 0.5 per cent for Greece to a little under 4 per cent for Sweden – with the OECD average being 2.3 per cent in 2006. The ratios do not change very quickly over time, which suggests that the capitalisation of GDP will have little impact on GDP growth rates. A word of caution is needed because the GERD to GDP ratio is only an approximate indicator of the impact of the capitalisation of R&D on GDP for three reasons.

First, there are conceptual differences between GERD and the national accounts measure of R&D production. Second, expenditure on R&D is already included in the output of non-market producers because output is measured by summing costs. However, R&D assets will incur consumption of fixed capital (depreciation) and so the gross value added (GVA), but not the net value added, of non-market producers will be boosted by the consumption of past R&D capital formation. In a growing economy, the consumption of past R&D capital formation will be generally less than current expenditure on R&D. Third, it is likely that some expenditure on R&D by government and non-profit institutions will not be recorded as capital formation.

Hence, the impact on GDP can be expected to be a little less than the GERD to GDP ratio suggests.

#### Military expenditure

In the 1993 SNA, offensive weapons and their means of delivery are excluded from capital formation regardless of the length of their life. That treatment implies that military assets provide defence services only and entirely in the period of acquisition. Further, weapons whose expense has been expressed as intermediate consumption, according to the present treatment, can be sold or exported in another accounting period, calling for counter-intuitive entries in the accounts for government. The recommendation is that all military expenditure that meets general SNA criteria for capital formation – that is, being used in production over a period in excess of one year – will be treated as capital formation. Weapon systems and military inventories will be distinguished within fixed capital formation and inventories respectively.

For many OECD countries, the new recommendation will probably be easier

## Box 2

### Spillovers

When the knowledge gained from R&D is traded by its legal owner with other units, such as via a licence or the sale of a patent, the exchange is recorded like that for any other product. But it is in the nature of R&D that the knowledge gained often becomes available to units other than the legal owner (or the economic owner if a licence agreement has the appearance of a sale of the R&D) by means other than a transaction. This can happen because the owner knowingly makes the knowledge available to others by putting it in the public domain, such as by patenting the knowledge or by making the knowledge freely available.

When a patent expires, other units are free to use the patented knowledge and gain benefits – something that commonly occurs with the production of pharmaceutical products. Even though a patent may prevent another unit using the knowledge directly until the patent expires, awareness of what is in the patent may still be beneficial to another unit. The knowledge also can be spread by other means, such as by the legal owner, or a licensee, using the knowledge in their production. The benefits that accrue to units other than the owner are commonly referred to as spillovers. The upshot is that it is common for the owner to obtain only a portion of the economic benefits provided by the knowledge gained from their R&D, but it is only that portion that should be recorded as an asset in the system.

to implement than the old one because the 1993 SNA requires countries to differentiate between expenditure on military ‘assets’ that could be used for civilian purposes (which are recorded as capital formation) from those that cannot (which are expended). The new recommendation is also consistent with recent changes in the international public sector financial accounting standards. Possibly the greatest obstacle to implementation is the level of secrecy that surrounds military expenditure in some countries. While all countries operate their military budgets with some degree of secrecy, this issue may be especially problematic for countries with a high level of secrecy.

### Quantitative impact

The change to the treatment of weapons systems will boost GDP level by an amount equal to the consumption of fixed capital of weapon systems, and this will vary considerably between countries. The US has already adopted the change, and this adds about 0.5 per cent to US GDP (Mead *et al* 2004).<sup>7</sup>

### Goods for processing

Both the 1993 SNA and the *Fifth Edition of the Balance of Payments Manual* (BPM5) treat goods that are sent abroad for processing and then returned to the country from where they were dispatched as undergoing an effective change of ownership. The goods are therefore recorded in exports when they leave the first country and again in imports when they return to it. The country undertaking the processing is shown as producing goods that are recorded at their full value, even though the processor never has to pay for the value of the goods on entry. With the increasing importance of offshore processing, such treatment is increasingly questionable. It is further complicated by a different recommendation for goods being processed in one country for a second, which instead of being returned to the second country are sold (on behalf of the owner in the second country) to a third country.

The recommendation is that imports and exports should be recorded on a strict change of ownership basis in both the SNA and BPM. That is, goods being processed in one country on behalf of another should not be part of imports and exports in the balance of payments and SNA. This is a change from the 1993 SNA and BPM5. The consequences affect the recording of transactions within the national economy

as well as international transactions. The decision to record on a pure change of ownership basis implies that no transactions will be recorded for intra-enterprise (inter-establishment) deliveries when goods are passed from one establishment to another for processing and then returned.

This has implications for the input-output tables, which on the proposed basis will reflect what each unit contributes to the production process rather than the physical technology, as previously was the case. This recommendation recognises that many goods move from one country to another without entailing a consequential payment from the recipient country to the sending country other than for the service provided. The recommendations have implications for the way in which the physical movement of goods, captured in merchandise trade statistics, is reconciled with the international flows to be recorded in the balance of payments and the National Accounts.

### Quantitative impact

In principle this change will have no impact on GDP. The change will lead to lower estimates of output and intermediate consumption, but the reduction will be the same and so there will be no change to industry GVA. Exports and imports will also be reduced by the same amount, and the reductions could be relatively large for some countries.

### Introduction of the 1993 SNA Rev. 1 by OECD countries

A number of significant changes were made with the 1993 update of the SNA and, because some of them were implemented quite differently by countries, international comparability suffered. Such was the case for computer software. The 1993 SNA, unlike its predecessor, recognises software as an asset – if it meets the general definition of an asset. When they adopted the 1993 SNA, countries employed quite different means to estimate the value of capital expenditures on software in both current prices and volume terms, and it was only in 2002 that an OECD task force was set up to develop guidelines.

The lesson has been learned, and work has already begun on developing guidelines for the measurement of capital expenditures on R&D, and these are to be incorporated in a new OECD handbook on measuring intellectual property products, as already noted. Likewise, the revised OECD manual *Measuring Capital* will provide comprehensive guidance on the

measurement of capital services and related statistics.

In 2006, the OECD conducted a survey of OECD member countries to determine when they expected to introduce the changes in the 1993 SNA Rev. 1 and adopt the *International Standard Industry Classification (ISIC) Rev. 4*, or their national or regional version of it. The switch to ISIC Rev. 4 is a major undertaking for many countries and its implementation affects when countries will adopt the 1993 SNA Rev. 1. Some prefer to introduce the two together while others prefer to do them separately. Many national statistical offices (NSOs) compile their national accounts using supply and use tables<sup>8</sup> and/or input-output tables, which are an important tool for compiling consistent and accurate national accounts, as well as having many other uses, such as productivity analysis. The changes to the two standards will mean recompiling these tables for at least a few years, if not the entire time series.

Whatever they do, most NSOs will endeavour to provide consistent and continuous time series to the extent they are able. The advantages of adopting the two revised standards together are that there is only one major change for users to deal with and there is no duplication of effort in implementation. The disadvantage is that it is a lot of work for a NSO to do all at once. The EU countries are to make the two changes separately. They have decided to implement NACE<sup>9</sup> Rev. 2 in 2011, and it is proposed to adopt the revised *European System of Accounts* (ESA)<sup>10</sup> in 2011, but not implement it in releases until 2014. Neither of the last two dates is firm. The need for coordination and comparability in EU national accounts is most important because they are used for administrative purposes, such as determining each country’s contribution to the EU budget. This is the *raison d’être* for the ESA, which provides a ‘cookbook’ for EU countries to follow. But it all takes time to develop, legislate and then implement. It is likely that non-EU European countries will follow the EU timetable.

Non-European OECD member countries have indicated quite different dates:

- Australia has indicated its intention to introduce most of the changes in the updated SNA in late 2009, along with the ‘Australian New Zealand Standard Industry Classification (ANZSIC), 2006’

- Canada intends to introduce all the changes in the updated SNA in 2012.
- The US has already implemented some of the changes, namely the extension of the asset boundary to all military expenditure of a capital nature and the new treatment of non-life insurance services. It intends to introduce the remainder progressively. The biggest change in terms of its complexity and impact on GDP is the capitalisation of R&D. This has been provisionally scheduled for inclusion in the core accounts in 2012/13 (a satellite account is well underway now). Several other major changes will probably be introduced in 2012/13, but some of the other changes may be introduced at other times. NAICS 2007 will be introduced in the National Accounts in 2010
- Korea has a tentative plan to adopt the updated SNA in 2014, at the same time it adopts the revised 'Korean Standard Industry Classification'
- Japan has not made firm plans, but the likely timing is the adoption of both the updated SNA and revised 'Japanese Standard Industry Classification' in 2015
- Mexico intends to adopt the updated SNA in a staggered fashion. The proposed changes concerning some issues, such as pension schemes, non-performing loans and guarantees, could be introduced in the medium term, while those relating to the capital formation of non-financial assets are likely to be introduced later. No decision has yet been made on specific dates for making these changes. Mexico plans to introduce NAICS 2002 (which is only a little different from NAICS 2007) in 2007
- New Zealand has not yet developed a schedule for adopting the updated SNA, but it intends to introduce all the changes at the same time. It has tentative plans to introduce ANZSIC 2006 in either 2010 or 2011. An important expected outcome of the adoption of the revised industry classifications is much greater comparability between country industry data. A majority of OECD countries intends to implement the new ISIC (or national/regional forms of it) by 2011. Thus, the OECD intends to implement a new questionnaire, using the new SNA ISIC aggregations (A10 and A38 levels) in 2011, in coordination with Eurostat

## Summary and conclusions

This article has summarised the update process of the 1993 SNA and given some details of some of the most important changes. Descriptions of all the substantive changes to be made in 1993 SNA Rev. 1 can be found in the *Full Set of Consolidated Recommendations* on the UNSD website. Only a few of the changes will have an appreciable effect on GDP and other major aggregates. It is unclear whether the change with potentially the biggest impact on GDP, the capitalisation of R&D, will be actually introduced in the core accounts of many countries and, if it is, when. However, most OECD countries will at least compile R&D satellite accounts which could support international comparisons.

It is likely that most OECD countries will implement most of the changes over a five- or six-year period, starting at the end of 2009. It is expected that as countries adopt the new SNA they will make estimates on both the old and new bases for an overlap period, but it is unlikely that countries will continue to compile old and new estimates in parallel for subsequent periods. This means that there will be a reduction in comparability for a number of years, but it is unlikely that any of the changes will have much impact on GDP growth rates.

The OECD will work over the next few years both on the preparation of implementation manuals and on the continuous assessment of data comparability. Users will be informed about the progressive adoption of the 1993 SNA Rev. 1 with appropriate metadata.

## Notes

- 1 Charles Aspden is Senior Administrator in the OECD 'National Accounts and Financial Statistics Division' of the Statistics Directorate. He is a member of the Intersecretariat Working Group on National Accounts (ISWGNA). This article is an edited version of an earlier article of his published in the *OECD Statistics Brief*, available at [www.oecd.org/ataoecd/32/39/39267818.pdf](http://www.oecd.org/ataoecd/32/39/39267818.pdf)  
In preparing this brief, he has drawn heavily on two documents prepared by the ISWGNA: its 2007 report to the United Nations Statistical Commission and the *Full Set of Consolidated Recommendations*, both of which can be found on the website of the United Nations.
- 2 Fixed assets are man-made products that are expected to be used in

production for more than one year.

They include equipment (but not household items), buildings, structures and computer software.

- 3 GDP combines in a single figure, and with no double counting, all the output (or production) carried out by all the firms, non-profit institutions, government bodies and households of a country during a given period, resident within its economic territory.
- 4 *Measuring Capital* is undergoing a revision. The new edition is expected to be released in early 2008.
- 5 *OECD Frascati Manual 2002: Proposed Standard Practice for Surveys on Research and Experimental Development*.
- 6 One of the principal aggregates obtained from R&D surveys conducted as per the *Frascati Manual*.
- 7 The US Bureau of Economic Analysis provides the OECD with annual national accounts estimates that are consistent with the 1993 SNA, and for which expenditure on weapons systems are recorded as consumption. These data appear in the OECD's releases of annual national accounts data. However, such data are unavailable quarterly, and so the quarterly US national accounts data available from the OECD include the capital formation of weapons systems.
- 8 Supply tables show the production of industries by commodity, while use tables show the uses by industries of commodities, both domestically produced and imported.
- 9 General Industrial Classification of Economic Activities within the European Communities.
- 10 The revised ESA is intended to be generally consistent with the updated SNA.