

Σ SIGMA

THE BULLETIN OF EUROPEAN STATISTICS

The economy
by numbers

Focus on
national accounts



Editorial



This new issue of *Sigma* deals with national accounts, a topic not well known to the wider public despite its huge importance. We start by introducing the basic concepts as employed by national accountants in their daily work. Opening articles explain the differences between annual, quarterly and sector accounts, as well as how public finances are dealt with in Eurostat. The revision of the European system of accounts and the use of national accounts in policymaking are also explained. Finally, future developments of national accounts are highlighted in an article by Eurostat's Director, Laurs Nørlund.

In the second section of our magazine, we focus on best practices acquired in the production of national accounts by the European Member States as well as challenges encountered on the way. Hungary, Finland and Cyprus provide the examples. The European Central Bank describes its work with financial accounts, as does the Portuguese Central Bank.

Sigma also deals with the more specialised topic of satellite accounts in the Netherlands. Readers will get acquainted with the ins and outs of environmental accounts in Eurostat and the World Wide Fund for Nature presents the ecological footprint — their alternative to the most well-known economic indicator, gross domestic product.

In order to portray the users of national accounts data, we meet representatives from the European Commission's Directorate-General for Economic and Financial Affairs as well as analysts from one of Germany's largest financial groups, Deka Finanzgruppe. The British National Institute of Economic and Social Research is also presented.

Finally, we talk to two international organisations involved in national accounts: the United Nations Statistics Division and the Organisation for Economic Cooperation and Development. We also look at the challenges faced in the development of national accounts in countries such as Cameroon and Brazil.

We close this issue with a feature on the national Bulgarian Statistical Institute and their new Director-General, Mariana Kotzeva.

Walter Radermacher
Eurostat Director-General



Contents

SIGMA

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Editor in chief: Philippe Bautier

Editorial team: Lukasz Augustyniak,

Beatriz Fernández Nebreda, Annika

Östergren Pofantis, Johan Wullt.

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E-mail: eurostat-pressoffice@ec.europa.eu

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- 4 Walter Radermacher —
New Director-General of Eurostat
- 5 What are national accounts?
- 7 Inside the national accounts
production at Eurostat
- 10 Eurostat — Watchdog of European
public finances
- 13 Revision of European system
of accounts begins
- 15 National accounts at the heart
of EU policies
- 17 The future of national accounts
- 19 Like a house of bricks
- 21 Portugal — Proposing an
innovative model of national
accounts compilation
- 23 Supply and use tables —
An indispensable tool for producing
reliable national accounts
- 26 Regional accounts —
Finland leads the way
- 29 Production of national accounts
in Cyprus
- 32 Satellite accounts sharpen the focus
- 36 Environmental accounts —
A beautiful tool to study
the links between the environment
and the economy
- 39 Beyond GDP — The ecological
footprint?
- 41 EU watchdog forecasts
and surveys the economy
with data from Eurostat
- 44 Forecasting future economic
challenges
- 47 British economist requests more
information on data reliability
- 49 Challenges of implementing
the 2008 system of national
accounts worldwide
- 52 OECD — Unveiling the full
potential of national accounts
- 54 A journey with no end —
The production of national
accounts in Cameroon
- 57 Brazil — Measuring
a growing economy
- 59 Putting the user first —
Sigma meets the President
of the Bulgarian National
Statistical Institute
- 62 Tanya Alexandrova — ‘Hard work
but rewarding’



Walter Radermacher — New Director-General of Eurostat



On 1 August this year, Walter Radermacher took up the post of Director-General of Eurostat. Mr Radermacher is an experienced statistician with a long career at the German Federal Statistical Office, Destatis. He succeeded Hervé Carré, who retired at the end of June 2008.

Eurostat's new Director-General, Walter Radermacher, said that his post as Head of the German Statistical Office taught him a lot about the importance of close cooperation between regional offices. 'I shall now be expanding this experience beyond the borders of one country.' © Destatis

Although being a professional statistician is not a strict requirement for heading Eurostat, Walter Radermacher's extensive knowledge of the science will certainly be a great advantage for the European Commission's Directorate-General charged with the production of statistics for the EU.

Born and raised in Aachen in North Rhine-Westphalia, Mr Radermacher studied business economics at the University of Münster, north of Aachen.

It was at university that Mr Radermacher got his first job in the field of business mathematics (operations research). 'The work, although at first interesting, soon proved too theoretical for me. I needed something more linked to "real" life, to politics, sociology. This I found at Destatis,' Mr Radermacher told *Sigma* in a recent interview.

Thirty years' experience in statistics

Mr Radermacher joined Destatis in 1978. In his 30 years at the Federal Statistical Office in Wiesbaden, Mr Radermacher worked in a multitude of fields, from service industry, tourism and land-use statistics to geographic information systems.

In 1990, Mr Radermacher switched to environmental accounting, which was to become his passion to this day. Having held

a number of managerial positions, in 2003 he became Vice-President and then, in 2006, President of Destatis.

In the first six months of 2007, Germany held the EU Presidency. During this period Mr Radermacher was also the chairman of the EU Council's Working Group on Statistics.

Mr Radermacher told *Sigma* that his post as Head of the German Statistical Office taught him a lot about the importance of close cooperation between regional offices. 'I shall now be expanding this experience beyond the borders of one country,' he added.

Mr Radermacher said that years of close cooperation between Destatis, Eurostat and various statistical offices in the European statistical system have prepared him well for present and future challenges. 'I have no doubt that Eurostat is the most important player in international statistics worldwide,' Mr Radermacher said. 'I am convinced that its future importance will increase. Eurostat's work is essential on a daily basis not only when discussing international issues but also in the concrete decision-making processes at a European level.'

Mr Radermacher went on: 'Let's take the example of the Lisbon agenda: EU leaders want to give new impetus to economic reforms and make the Member States globally more competitive. Eurostat's data are and will continue to be of key importance in this process.'

According to Mr Radermacher, statisticians not only have a huge responsibility towards the societies and politics of today, but also to those of tomorrow. 'I am thrilled to take over at a time of sweeping global changes. In these difficult times, we must learn to anticipate what the needs of policymakers, but also those of private data users, will be in 5 or 10 years and act well in advance.'

By Lukasz Augustyniak, Eurostat Communication Unit

What are national accounts?



John Verrinder, national accounts expert at Eurostat, writes that the gross domestic product (GDP) is the answer to politicians' requests to summarise what is happening in the economy. © EC C. Ardillac

National accounts, often called macroeconomic accounts, are statistics focusing on the structure and evolution of economies. They provide a framework for numerically describing and analysing, in an accessible and reliable way, the almost unimaginably large number of economic interactions within an economy.

It is hard to imagine how economic policymaking could take place without reliable macroeconomic data. But this was the case, even in the recent past, with policymakers dependent on a limited number of often-incoherent primary data sources. Despite early heroic attempts stretching back as far as the 17th century, modern national accounts emerged only from the 1930s onwards, as the language and field of macroeconomics developed, for example through the work of Keynes and others. Increasing government intervention in economies demanded better data for planning and evaluating. Economics rapidly became a numerical science, with economists simultaneously producing data and testing their theories.

The modern structure of national accounts was developed in the 1950s through the work of Richard Stone and collaborators, and quickly spread across countries within Europe and outside. Some fundamental questions emerged, such as the productive role of government and the integration of financial transactions. The results of these debates have

led to a general structure which has remained remarkably stable over the last half-century.

It was perhaps inevitable that the production of national accounts was integrated into public national statistical systems, given the reliance of the accounts on statistical source data and the need for a single 'officially endorsed' set of increasingly detailed accounts. Intergovernmental organisations such as the United Nations and the Organisation for Economic Cooperation and Development (OECD), later to be joined by the European Commission and others, took up a coordinating role for international standards (the system of national accounts, or SNA), which continues to this day.

Economic logic

Given that economists gave birth to national accounts, and remain the principal users, it is not surprising that the structure of the accounts follows an economic logic. What is perhaps surprising is that national accounts continue to be broad enough to be the main source for economic analysis, whatever 'school' an economist may belong to. It is also helpful for users that, even though these are economic accounts, they share many features (in substance and presentation) with business accounts, such as an integrated stock (balance sheet)/flow (operating account) approach.

The national accounts track economic value, created through the production process, distributed as income to recipients, and then consumed, invested or saved. These are known as non-financial transactions. They are measured in monetary terms, even when no such data exist (for example where services are given for free, and values must be imputed). National accounts also show how a national economy interacts with other nations' economies, for example through the import and export of goods and services.

But the national accounts also include financial accounts, which analyse who owns financial assets (currency, bonds, shares, etc.), who owes whom, and how net financial wealth changes over time. This change may be due to a deficit or surplus arising from the non-financial transactions described above, or due to changes in the value of financial assets.



Financial accounts are also included in national accounts. They analyse who owns financial assets (currency, bonds, shares, etc.), who owes whom, and how net financial wealth changes over time. © Kellermeister/PIXELIO (www.pixelio.de)



National accounts track economic value, created through the production process, distributed as income to recipients, and then consumed, invested or saved. These are known as non-financial transactions.
© Phovoir

There is a strong interest from users for these accounts to be broken down in some detail by the 'actors' participating in the economy. Some users are interested in the activities of broad economic sectors — how much did households save last quarter, how much did corporations invest, what was the government deficit? Other users wish to analyse the production process in detail — which industry is a customer for another industry's products? The national accounts contain enough detail to satisfy these needs.

Summarise in one number

There is always a demand for simplified key aggregates from the national accounts, as if a politician would ask 'please summarise for me what's happening in one number'. The most widely used and quoted aggregate is gross domestic product (GDP), which captures the total of economic value produced, received and spent. It is used in many fields of statistics as a scalar — commonly to express values as a percentage of GDP. But there are other aggregates which are used for administrative purposes, such as gross national income used in the EU budget, and government net lending/borrowing used in the EU's excessive deficit procedure.

There is naturally a strong interest in how economies grow over time. The national accounts include data which have been adjusted to remove the effect of prices, leaving 'constant price' series. Whilst this is often accomplished at a very detailed level, product by product, the headline indicator remains the real growth rate of GDP. There is also an interest in comparing economies — is the economy of country x greater than that of country y — for which purchasing power parities have been developed to apply to national accounts data.

Even if the national accounts system is very wide-ranging, some users would like to see it extended in specific areas. There has been a growing desire to apply national accounts principles to other areas of statistics, in so-called satellite accounts. Good examples of this are environmental accounts, education and health accounts.

Having an eye to the future

The theoretical design and detail of national accounts is impressive. But one must not discount the challenges involved in practical compilation of the accounts quarter-to-quarter and year-to-year, and the resources needed to do so. The accounts are based on a wide variety of often-conflicting and incomplete data sources, which must be reconciled in multiple dimensions to achieve a fully balanced set of detailed accounts. To deal with this, national accountants need a broad knowledge, good judgement and strong commitment to working closely with data suppliers.

There are a number of ongoing challenges in national accounts. They must continue to be relevant for a rapidly changing economy, defining how new ways of generating and distributing economic value can be incorporated in the statistics. They must be responsive to user needs, particularly where users demand ever faster and ever more detailed data. They must reflect the evolution of data sources, where existing data sources may be compromised and new ones emerge. National accountants must therefore deal with the high workload of preparing the national accounts, whilst always having an eye to the future. They are usually busy people!

By John Verrinder, Eurostat Validation of Public Accounts Unit

Inside the national accounts production at Eurostat

Eurostat produces a wide variety of national accounts data. This article deals with their two key parts: the so-called main aggregates and sector accounts. *Sigma* asked three Eurostat experts — Roberto Barcellan, Ingo Kuhnert and Denis Leythienne — to explain the key concepts and procedures behind the national accounts production at Eurostat.



Roberto Barcellan, Head of Eurostat's National Accounts Production Unit, flanked by Ingo Kuhnert, team leader in charge of the production of main aggregates, and Denis Leythienne, team leader dealing with sector accounts.
© EC C. Ardillac

‘The main aggregates, covering the annual and quarterly gross domestic product (GDP) and its components, are among the most significant indicators of the state of any economy, be it at a national or European level,’ began Ingo Kuhnert, team leader in charge of production of main aggregates at Eurostat.

‘Indicators like GDP, household private consumption, government consumption expenditure, investments, exports, imports, employment, gross national income and gross disposable income are the key headline figures of interest to us,’ said Roberto Barcellan, Head of the National Accounts Production Unit.

‘We inform our users on the growth of individual European economies but also that of the EU and the euro area as a whole. Our figures go beyond the key macroeconomic aggregates and are complemented by detailed breakdowns by industries (agriculture, manufacturing and services) and data on household consumption by functions.’

‘They also offer a view of the economy through the perspective of institutional actors (such as households, public sector, financial and non-financial corporations) and a detailed overview of production aspects through supply, use and input-output tables. And finally, the overall picture is completed by regional accounts.’

an national accounts was maintaining consistency between the figures used for compiling European aggregates and the statistics provided by individual European countries.

‘Furthermore, national accounts have an area of overlap with other fields such as employment and demographics,’ Mr Kuhnert added. ‘Although not part of national accounts, they supply us with important information relating to, for instance, value added and output, resulting in important indicators such as labour productivity or GDP per head. In order to ensure the consistency of definitions we include them in our data collection.’

The team led by Mr Kuhnert produces the key macroeconomic national accounts figures based on the analysis of two different sets of data — those collected for a quarterly round-up (quarterly main aggregates, or QNA) and the yearly compilation (annual accounts or, ANA).

Annual versus quarterly aggregates

‘In theory, one could say that the data used to produce both the quarterly and annual aggregates should be the same,’ said Mr Kuhnert. ‘In practice, the differences in the source data can make the compilation of the quarterly accounts substantially different from the annual one.’



The 'typical' user of the quarterly national accounts is a market analyst, forecaster or a short-term economic and monetary actor, assessing the state of the current business cycle. The annual accounts are used by either an analyst researching changes in the structure of the economy or a politician. © Deutsche Börse

According to Mr Kuhnert, data used for the compilation of annual aggregates are generally seen as more 'reliable', because the compilers can use data from annual surveys, usually more detailed and accurate, without the extraordinary timeliness pressure encountered in the compilation of the quarterly aggregates.

In view of this, there is a difference in the types of users of QNA and ANA. 'The "typical" QNA user is a market analyst, forecaster or a short-term economic and monetary actor, assessing the state of the current business cycle,' said Mr Kuhnert. 'The ANA user, on the other hand, is either an analyst researching changes in the structure of the economy or a politician. However, all users expect annual and quarterly accounts to tell a consistent story.'

Mr Kuhnert explained that the main aggregates data were often used in conjunction with other domains of official statistics. 'Thus, quarterly accounts "go well" together with figures on unemployment, industrial production or inflation to form an image of the economic state of the business cycle. Annual accounts, on the other hand, are well complemented by social and demographic data, to form an image of the economic state of a society,' he explained.

Sector accounts

'Within national accounts, sector accounts make the link between transactions and their impact on the income and wealth of economic agents that are grouped together in the so-called institutional sectors,' said Denis Leythienne, team leader dealing with sector accounts.

'For instance, a family may be renting out their real estate, which will be recorded as production of housing services. As part of their revenue, their wages may be complemented by social

transfers from the state such as family allowances. On the expenditure side, this family is likely to pay taxes and social contributions as part of their wages, and interest on their mortgage payments.'

Mr Leythienne said that such transactions, leading to an increase or decrease of the income of economic agents, are what the sector accounts deal with.

According to Mr Leythienne, families are seen as part of the household sector whose main role in the economy is to consume goods and services and contribute with savings to the financing of investments in their own (e.g. renovating their property) and other sectors (i.e. corporate buildings, machines). This is done through the intermediation of banks.

'Apart from households, other sectors include non-financial corporations (enterprises producing goods and non-financial services), financial corporations (producing financial services) and government,' said Mr Leythienne. 'This classification covers all economic agents, thus allowing a total description of any given economy as a whole.'

Transactions which take place between the whole economy of a country and other agents abroad are recorded in a special account called 'rest of the world', whose main data source is the balance of payments statistics.

Use of sector accounts

'To start with, sector accounts allow analysing how developments in income may impact on expenditure and then general economic growth,' said Mr Leythienne. 'They shed light on the economic behaviour of the players grouped in sectors. One key indicator derived from sector accounts is the household saving rate that measures the share of disposable income that had been saved. The spending/saving "mood" of households gives an indication of their level of confidence in the economic situation of the country.'

Mr Leythienne explained that sector accounts are also instrumental in analysing relations between different sectors of the economy. 'They help answer some of the crucial questions of today, from the influence the governmental tax policies have on various economic agents to the impact of interest rate rises by the European Central Bank on business investment,' he said.



The national accounts figures produced by Eurostat go beyond the key macroeconomic aggregates and are complemented by detailed breakdowns by industry (agriculture, manufacturing and services) and data on household consumption. © Phovoir

European sector accounts

'Together with the European Central Bank, Eurostat has developed a system of European sector accounts, which have been available on a quarterly basis since June 2007,' commented Roberto Barcellan.

The euro area and the European Union accounts are based on the national accounts of the Member States. 'Generally speaking, we start by taking the accounts of the Member States, European institutions and bodies and add them together,' explained Mr Leythienne. 'We then eliminate the cross-border transactions between EU countries (the so-called "intra-flows") from the "rest of the world" accounts. Finally, we remove any imbalances caused by the removal of intra-flows ("asymmetries") in order to re-balance the accounts.'

'In doing so, we obviously work very closely with the main aggregates' team within our unit, but also with the ECB and a number of other Eurostat units,' said Mr Leythienne. 'Here, we rely in particular on colleagues from the International Trade Statistics Unit, the Balance of Payments Unit and the Validation of Public Accounts Unit.'

The institutional sector accounts information is complemented by the financial data derived from the financial sector accounts, as compiled by the ECB and Eurostat. 'For

impacts on the economic wealth of each sector,' pointed out Mr Leythienne.

Regular news releases

The data produced by Eurostat are published at regular intervals in the form of news releases. 'The first one is the GDP flash, which comes out 45 days after the end of each quarter,' said Mr Barcellan. 'It is the very first picture of the state of the European economy and has, as you can imagine, a very powerful effect on the international media.'

The main aggregates are then published 60 days after the end of the quarter, followed by the third news release, put together 100 days after the end of the quarter. 'In addition, we release the employment figures 75 days after the end of each quarter and have a quarterly sector accounts news release at 120 days,' said Mr Barcellan.

Future prospects

'At the moment, we are working on improving the quality and timeliness of our figures,' Mr Barcellan remarked, 'with the aim to increase the reliability and accuracy of the published data and to cut down the time needed for the publication of news releases relating to the quarterly national accounts.'

According to Mr Barcellan, the instruments used to achieve these targets are the exchange of data and metadata related to national accounts and best compilation practices between different countries, the improvement of the methodological harmonisation in areas such as revision policy and seasonal adjustment, and the actions aimed to strengthen the links between basic statistics and national accounts.

By Lukasz Augustyniak, Eurostat Communication Unit



At the moment, Eurostat's national accounts team is working on improving the quality and timeliness of their figures. The aim is to increase the reliability and accuracy of the published data and to cut down the time needed for the publication of news releases of the quarterly national accounts.

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Eurostat — Watchdog of European public finances



Government finance statistics are crucial to the European Union, as they are used to determine whether a country's government debt and deficit are within certain limits linked to the stability of the euro currency.

EU countries are obliged to avoid excessive public finance deficits according to the Stability and Growth Pact. According to the Maastricht criteria, the public deficit should be less than 3 % of GDP and the debt less than 60 % of GDP. If a country reports a bigger deficit than allowed, the European Commission publishes a report and can recommend the Economic and Financial Affairs Council (Ecofin) to start an excessive deficit procedure. At the same time the Council recommends corrective actions to be undertaken within a certain time-frame. If the country still does not come to terms with the excessive deficit, the Council can oblige the country to undertake the actions and in the end the country can be fined. The rules apply both to the EU and euro Member States; however, only euro area countries can be fined.

The Ecofin Council suspends the excessive deficit procedure when it judges that the excessive deficit has been corrected.

Have you ever heard about the excessive deficit procedure? The Maastricht criteria? Wondered why these criteria are important? Have you thought about how the European Union keeps track of each Member State? Ensures everyone follows the same rules? *Sigma* met Luca Ascoli, Head of Eurostat's Public Finance Unit, and Lena Frej Ohlsson, Statistical Officer in the same unit, to find out more about government finance statistics.

Luca Ascoli, Head of Eurostat's Public Finance Unit, and Lena Frej Ohlsson, public accounts expert, and their colleagues are working on building up both the legislative framework and Eurostat's capacity to assist Member States on methodological issues. A new version of the *Manual on government deficit and debt* is also in the pipeline. © EC C. Ardillac

Eurostat keeps watch

In the EU, Eurostat is in charge of receiving, assessing and publishing government finance statistics submitted by the Member States, as well as ensuring that everyone follows the rules. The keystone for this work is the European system of accounts 1995 (ESA 95), which lays down the concepts and definitions for government finance statistics as well as other national accounts data. However, since ESA 95 is too general in some areas of government finance, Eurostat has published a manual — *Manual on government deficit and debt* — which provides more detailed information on how the rules in ESA 95 should be interpreted. Over the years the manual has been complemented with chapters on new issues, such as the classification of pension schemes and how they impact on government finance.

If Mr Ascoli and his colleagues discover that there is room for interpretation in an area and that a number of Member States are classifying a transaction in different ways, they can establish an ad hoc taskforce on a specific issue. It is chaired by Eurostat and consists of experts from the Member States, the European Central Bank (ECB) and the European Commission's Directorate-General for Economic and Financial Affairs. Before Eurostat adopts a decision on the issue, the Committee for Monetary, Financial and Balance of Payments Statistics (CMFB) may be consulted. When major new decisions, such as how to record public-private partnerships, are adopted, they eventually become new chapters of the manual, which are published on Eurostat's website.

The Committee for Monetary, Financial and Balance of Payments Statistics

The Committee for Monetary, Financial and Balance of Payments Statistics (CMFB) assists the European Commission in drawing up and implementing work programmes concerning monetary, financial and balance of payments statistics. Members come from the national statistical institutes and Eurostat on the one hand, and the national central banks and the European Central Bank on the other. The CMFB has no legislative powers. It is an independent committee with advisory functions.

For major important public finance accounting issues, the CMFB is consulted and provides an opinion. Eurostat has, so far, never gone against the advice of the committee, when it takes its decision of how to treat a transaction.

'The reservations and amendments are published at the same time as the data are made public — in April and October. We also work closely with the country to solve the issue bilaterally. At the end of the day it is an efficient procedure and through cooperation countries usually comply with Eurostat rules or advice,' said Mr Ascoli.

Road tolls and vignettes

Eurostat also has other means of clarifying the recording of different types of transactions, either on its own initiative or at the request of a Member State. Eurostat provides guidance notes on issues which are less complex and involve fewer Member States. This was, for example, the case for road tolls and vignettes. Tolls are mainly paid in proportion to the number of kilometres the car will travel, and vignette payments are designed for a predetermined time, such as a week or a year. The issue was whether the revenue from the tolls and sales of vignettes should be classified as sales of a service or as a tax.

Reservations and amendments

In theory, Member States are not legally bound to follow the rules in the *Manual on government deficit and debt*, as it is not an EU regulation. But, in recent years, case-law suggests that they should. In fact, three of Eurostat's decisions were challenged at the Court of Justice of the European Communities in 2007 and 2008, and in all cases Eurostat did not have to review its original decision.

Moreover, political pressure to comply is high. If Eurostat doubts the quality of the reported data it publishes 'reservations' in its press release. Eurostat may also in specific cases amend data reported by the Members States when the data do not comply with accounting rules.

'After analysing the subject and discussing it with the Financial Accounting Working Group where all Member States are represented, Eurostat issued a guidance note which says that tolls should be classified as a sale of a service. If the driver has sufficient choice both in terms of road selection and the duration of the vignette, this revenue should also be classified as a sale of a service,' said Ms Frej Ohlsson.

'All Member States have confirmed that they will follow this guidance note,' she continued.

Furthermore, since 2006 all Member States can consult Eurostat officially on how to classify a transaction in a specific case. Methodological advice may be given for transactions which are already undertaken, or for transactions which are planned.

	2004	2005	2006	2007	2008
Total	7 620 461	8 110 980	8 504 375	8 927 496	8 927 496
(million euro)	228 872	223 021	-107 690	35 538	35 538
% of GDP	2.6	2.5	-1.5	0.8	0.8
EU27	41.0	47.4	45.4	46.7	46.7
(million euro)	5 442 095	5 892 020	5 922 678	5 922 678	5 922 678
% of GDP	68.6	70.2	68.5	68.5	68.5
EU15	11 052 422	11 672 968	11 672 968	11 672 968	11 672 968
(million euro)	305 952	270 372	-105 793	-105 793	-105 793
% of GDP	44.0	40.9	44.4	44.4	44.4
EU10	6 580 368	6 971 301	6 971 301	6 971 301	6 971 301
(million euro)	62.2	62.7	62.7	62.7	62.7
% of GDP	62.2	62.7	62.7	62.7	62.7

Eurostat is in charge of receiving, assessing and publishing government finance statistics submitted by the Member States as well as ensuring that everyone follows the rules. © ECA. Östergren Pofantis



There are a number of ways Eurostat can clarify public accounting issues, either by taking decisions, issuing guidance notes or giving methodological advice. Eurostat has, for example, decided that road tolls and sales of vignettes should be classified as the sale of a service. © Rainer Sturm/PIXELIO (www.pixelio.de)

'As for all our decisions and guidance notes, we also publish the methodological advice we give to Member States, if they agree, on Eurostat's website,' said Ms Frej Ohlsson.

Country desks and missions

To further ensure that all Member States follow the rules, Eurostat has established country desks, where Mr Ascoli's team members keep a close eye on 'their' Member States. The Desk Officers also go on specific country missions together with representatives from the ECB and the Economic and Financial Affairs DG at least every second year. There they meet officials who work with government finance statistics, armed with questionnaires and inventories, in order to review in detail data and methodological issues.

'A typical country mission aims, among other things, to discuss the quality and exhaustiveness of primary data sources and to review the progress achieved in implementing ESA 95 methodology. We also want to assure that provisions from the *Manual on government deficit and debt* and recent Eurostat decisions are followed,' explained Ms Frej Ohlsson.

After each mission Eurostat publishes a report, which is available on Eurostat's website.

Building up capacity

In 2005, the Economic and Finance Ministers called for more resources to be allocated to the follow-up of the government finance statistics both at Commission level and in the Member States. This was due to the opening of excessive deficit procedures for Portugal, Germany and France in 2002 and 2003 and the accession of the 10 new Member States in 2004 — several of them reporting excessive deficits. It was furthermore linked to the revision of the Stability and Growth Pact in 2005, as well as major revisions of data in countries such as Greece.

'During the last few years we have built up both the legislative framework and Eurostat's capacity to help Member States on methodological issues. We also aim to publish a revised version of the *Manual on government deficit and debt* in the middle of 2009. The goal is to enhance the presentation, ensure that there are no contradictions and inconsistencies as well as to integrate the new chapters,' said Mr Ascoli.

By Annika Östergren Pofantis, Eurostat Communication Unit

Revision of European system of accounts begins

The national accountants' bible, the European system of accounts, is being revised. The revision started in parallel to the revision of the United Nations' version of the handbook — the system of national accounts — but has now rocketed off. 'All chapters of the new ESA are expected to be adopted by the European Commission in 2009,' Christian Ravets, senior statistician and national accounts expert at Eurostat, told *Sigma*.



Staff at the National Accounts — Methodology and Analysis Unit are working hard on the revision of the European system of national accounts, which will be implemented in 2014. First row: Christian Ravets, Francis Malherbe, Luiza Cristina Munteanu, Gallo Gueye. Second row: Ligia Frankford, Paolo Passerini, Alice Zoppe. © EC C. Ardillac

The European system of accounts (ESA) is an indispensable tool at European level. Data based on the system are used for major administrative purposes at EU level: the calculation of what each Member State contributes to the common budget, the excessive deficit procedure, and for distribution of the Union's Structural Funds. Data from the accounts are also used for analysis of the coordination and convergence of the Member States' economic policies (see also article on p. 15).

One important feature of the ESA is that it is an EU law, which is not the case for the worldwide system of national accounts (SNA). This means that the accounting rules are binding and that data transmission is compulsory for EU Member States. Another important difference with the SNA is that, while the worldwide accounts' guide is flexible and includes several options, the ESA generally chooses a particular alternative for more consistency at EU level.

Consistent with the SNA

The current version of the ESA dates back to 1995, but due to the effects of the globalisation and new economic phenomena it is being revised. The ESA revision closely follows the revision of the SNA and it will include all the 44 issues that were updated in the SNA. The major methodological changes in both systems concern how to handle pension schemes, research and development, military expenditure and goods for processing.

'The revised ESA will be consistent with the SNA, as regards definitions, accounting rules and classifications, so that European data are comparable at an international level. Nevertheless, the ESA is a bit different, as the specific administrative uses of the European system of accounts require greater accuracy,' said Gallo Gueye, Eurostat's Head of the National Accounts — Methodology Unit.

The work on revision and drafting new chapters is split among national accounts experts in Eurostat and in the Member States. Two chapters, drafted by Eurostat, will be similar in the new ESA and the new SNA. The first is a new chapter on satellite accounts (see article on p. 32) and the second focuses on the links between business accounts and national accounts.

'We have tried to keep the style coherent and revisions at a minimum in the existing chapters. However, sometimes it is necessary to rearrange information between the chapters as many issues are interlinked,' remarked Mr Ravets.

Wide and transparent consultation process

Depending on the issue, two working groups are involved in the revision of ESA 95 — the National Accounts Working Group and the Financial Accounts Working Group. In addition, the ESA 95 Revision Group was created, which takes the form of joint meetings with the above mentioned groups. It is consulted for all major issues. To increase transparency even further, a website — similar to the one used for the revision of the SNA 2008 — was set up in autumn 2008, where chapters are posted for country comments and an exchange of views.

In summer 2008, Member States had the chance to comment on six of the first chapters of the new ESA. Topics covered both completely new chapters (government accounts and satellite accounts) and revised ones (distributive transactions, units and grouping of units, etc.).

'The consultation process is very important and gives everyone the chance to comment on the different issues. When there are major issues where there is disagreement they are discussed in the working groups so that an acceptable solution for all can be found,' said Mr Gueye.



Due to globalisation and new economic phenomena, ESA 95 is being revised. The major methodological changes concern how to handle pension schemes, research and development, military expenditure, and goods for processing. Pictured is a research project on photovoltaic materials in Gelsenkirchen, Germany.

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Implementation in 2014

In the first half of 2009 the Statistical Programme Committee will give its green light to the project and the European Commission is expected to adopt the new ESA later in 2009. The next milestone will be its adoption by the European Parliament and Council in 2011 and then, finally, implementation in 2014.

'The Member States get a few years to implement the new system, as it will have an impact on resources and we also require that all data are back calculated for earlier years,' said Mr Ravets.

In parallel to the revision process two studies are carried out. The first aims to evaluate the implementation of the current ESA. What happened when it was introduced? What were the main difficulties? The second study assesses the impact of the introduction of the new ESA and aims to provide answers to questions such as: What will happen internally in the statistical institutes in terms of staff, IT investments, etc.? And what will be the impact on the main aggregates, notably gross national income and gross domestic product?

'The idea is to avoid some of the problems from the last round. We are also interested in getting a better idea of the size of the impact on the main aggregates. We expect EU GDP to rise somewhere between 1 and 2 %,' observed Mr Ravets.

By Annika Östergren Pofantis, Eurostat Communication Unit

National accounts at the heart of EU policies



National accounts data lie at the heart of many European Union policies. They are the basis for how much the Member States contribute to the common EU budget. They determine who will receive regional funding. National accounts data are also essential for the management of the euro and the countries in the euro area. *Sigma* spoke to Laurs Nørlund, Director of National and European Accounts at Eurostat, about the use of national accounts data in EU policies.

Laurs Nørlund, Eurostat's National and European Accounts Director, said that national accounts have been at the heart of European policies, since the birth of the European Community, as the data compare Member States on an equal footing in an equal framework. © *European Commission*

The interest in national accounts took off early in the 20th century, especially when government planning became fashionable. However, the golden age for national accounts at European level started some 30 years ago.

'Policymakers wanted European data when they started devising new Community policies. National accounts data were especially interesting as they could be used to compare Member States on an equal footing in an equal framework. Since then national accounts lay at the heart of European policies and this development has gone hand in hand with a deep harmonisation of concepts and methodologies,' said Mr Nørlund.

Regional development

The demand for national accounts data in the European Union has increased gradually. One of the first areas where data needs became apparent was regional development policy. The European countries have a common cohesion policy, which aims to decrease the economic and social differences within the European Union.



The regional policy really kicked off in the mid-1980s when Greece, Portugal and Spain became Member States. It was during this time that Eurostat developed the regional GDP data.

Today nearly 45 % of the EU's budget, or EUR 60 billion, is spent each year on long-term regional development in those regions which have a GDP per inhabitant under 75 % of the EU average. Eurostat's role is to provide GDP data for the 270 EU regions in question.

'The definition of the regions is always a hot potato. Then comes the count of the people in the regions and finally the actual GDP data and the transformation in the purchasing power parties, which all put Eurostat work at the centre of regional policy,' Mr Nørlund explained.

Billing the Member States

Another important piece in the puzzle of the use of national accounts is the fact that the Member States' contribution to the EU budget is based on national accounts data. From the beginning, revenues were varied and came from, for example, customs duties, agricultural levies and value added taxes. Over the years other sources were added and some suppressed. Today the main chunk (70 %) is based on gross national income (GNI).

Eurostat's role in the EU budget process is to validate the data submitted by the Member States, as well as the sources and methods they use. In October each year Eurostat sends the verified GNI data to the European Commission's Directorate-General for the Budget, which uses the data to invoice the Member States.

During the 1980s, Eurostat started developing regional GDP data. They are used for EU cohesion policy, which aims to decrease the economic and social differences within the European Union. Pictured are roadworks co-financed by EU funds in Malta.

© *European Commission*



EU Member States contribute to the common budget based on national accounts data. Pictured is the President of the European Parliament, Hans-Gert Pöttering, signing the 2008 EU budget, in the presence of (from left to right): Kyösti Virrankoski, Vice-Chairman of the European Parliament's Budgets Committee; Dalia Grybauskaitė, European Commissioner for Financial Programming and Budget; José Manuel Barroso, President of the European Commission; and José Sócrates, Prime Minister of Portugal.
© European Commission

'We work closely together with the Budget DG and under close scrutiny of the Court of Auditors. In fact the Court of Auditors visits Eurostat at least 10 times per year, so we are probably the only Commission service under permanent audit by the Court. Member States also take a keen interest in our work, as their contributions amount to 1.24 % of their GNI,' said Mr Nørlund.

Stability and Growth Pact

A multilateral economic surveillance in the European Union was introduced with the Maastricht Treaty's Stability and Growth Pact. The European Commission evaluates the euro countries' financial stability and the non-euro Member States' convergence programmes. Countries wishing to join the euro area have to fulfil the so-called Maastricht criteria. All the criteria are based on statistical aggregates or other types of economic data. Both euro candidates and euro members should respect these numerical criteria. They concern a certain rate of inflation and interest rate and, on the national accounts data side, a government deficit lower than 3 % of GDP as well as a government debt less than 60 % of GDP. The aim is to maintain budgetary discipline in the monetary Union.

Eurostat reports debt and deficit data to the Commission and the Council twice a year, where the Economic and Financial Affairs DG assesses the situation in each Member State. Eurostat is also responsible for ensuring that the Member States correctly use the rules in the European system of accounts (ESA). If a new type of transaction comes up, which is not described in the ESA, Eurostat analyses the situation and clarifies how the transaction should be treated (see also article on p. 10).

'The debt and deficit notification always attracts lots of interest, from the Member States and the media, and Eurostat

has clearly gained visibility and discipline from the use of national accounts data,' Mr Nørlund remarked.

Quality impetus

Mr Nørlund believes that the use of national accounts data in the EU has brought with it a very strong quality impetus.

'The development of methodology, common concepts and standards has moved forward rapidly. Every Member State is interested in the data and that they are calculated correctly everywhere.'

As the national accounts data are used for important political decisions and are also crucial to monitoring Member States' behaviour, pressure can be high on Eurostat.

'There could be an unhealthy link between policy use and objective statistics production and there might be tensions, but I believe Eurostat has managed to maintain independence. At all levels in the Commission there is a profound respect for the need to maintain Eurostat's professional independence. It is not easy, but it works,' he pointed out.

In the future, Mr Nørlund sees a continued high demand for national accounts statistics (see also article on p. 17).

'My impression is that numerical targets and benchmarking will be even more en vogue in the future and an integral part of more EU policies. The national accounts provide a rigorous and precise framework in order to analyse and benchmark a variety of societal phenomena and set precise policy objectives.'

By Annika Östergren Pofantis, Eurostat Communication Unit

The future of national accounts

Gross domestic product (GDP) is the most successful statistical indicator of the 20th century. Its use goes far beyond the community of national accountants, the statistical community and even beyond the expert user community of economists and economic researchers. It has become a household concept in the global village, used in general news media without further explanation and loosely understood as convenient shorthand for economic growth or production capacity in an economy, usually the national economy.

The success of the indicator is understandable, as GDP is, technically speaking, merely a balancing item in a double-entry accounting system, balancing the output side and the input side of the productive sectors in the economy. It is abstract, you cannot see GDP or directly measure it anywhere, and it only exists as a derived concept in the accounts.

On the other hand, the success is hardly surprising when you imagine that with GDP we can capture, in a meaningful way in a single figure, the billions of economic activities carried out by millions of economic actors in a society in a given period of time. Your buying a loaf of bread in the supermarket, the shop's effort to market the bread and provide the infrastructure where you can buy it, the transporters bringing it to the shop from the bakery, the production of the bread and all of its ingredients from flour to yeast and salt, are all

captured in the accounts and translated into simple aggregate figures. The communicative power of such a system is truly overwhelming.

GDP and the national accounts are more broadly loaded with weaknesses. The limitations of the system have been known from the very beginning and were recognised by some of its key authors. The system does not cover all activities of an economic nature such as unpaid work carried out in households. It does not in practice cover illegal activities because of measurement problems. The system has difficulties in dealing with a range of external issues, such as the environmental impact of economic activity. Finally, while it is based on observed statistical data, the system also contains a wide range of assumptions and imputations, which may render analytical conclusions less solid and reliable.

Difficult to imagine an alternative

Despite these obvious weaknesses it is difficult to see what kind of alternative could be presented by economic and statistical science to offer a comprehensive analytical framework for the systematic observation of economic systems.

Consequently, demand for national accounts statistics is not on its way down. On the contrary, there is an ever increasing appetite for more and more sophisticated and detailed economic analyses by governments, business and researchers alike and for making the accounts available to new and different kinds of analysis of societal phenomena in a much broader sense. In the EU we have seen new demands developing both for much more aggregated information as well as for detailed data for the purposes of policies with numerical quantitative targets such as the Stability and Growth Pact.

Three-headed approach

The response to these demands from the national accountants in the EU has to be ambitious. In the long run, we should



The GDP indicator and national accounts have limitations. The system does not, for example, cover unpaid work carried out in households or illegal activities. However, despite these obvious weaknesses it is difficult to imagine an alternative, argues Mr Nørlund. © Phovoir



Mr Nørlund explained the success of the GDP indicator with the fact that it captures billions of economic activities carried out by millions of economic actors in a society. © Phovoir

continue to invest in at least three different strands of development. Firstly, we should aim at improving the accounts, wherever possible, within the current paradigm. This means, for instance, openness towards reconsidering the boundaries of the production sphere, if that can increase the information value of the system. Secondly, a more logical and fully integrated system of economic statistics should be built which would allow the system to generate more information. This implies taking full advantage of new rich data sources becoming available because the economic transactions of our society are rapidly becoming completely digitalised. Infra-annual statistics, specifically targeted to economic cycle analysis, could thus be developed. Likewise, satellite accounts fully consistent with the main framework and putting together monetary and non-monetary data could be further elaborated. Finally, it is essential to better adapt the system towards a Europeanised and a globalised economy and make it less dependent on nation states as the key reference framework.

It is doubtful whether the changing nature of the economies should lead to a complete change of the fundamental paradigms of national accounts. While attempting to discard old

concepts, such as 'old market-based GDP', and adopt new ones, such as 'green GDP', as more suitable, it should be carefully considered what information value would be gained by a fundamental shift in orientation and what information value could be lost.

On the other hand, without the readiness to develop and continuously rethink the system, there is a definite risk that the measures provided by the system could become increasingly distant from and less relevant for the mainstream economic analysis of the future.

As we are slowly approaching a century of modern national accounts, this way of describing essential features of the world has earned its place as one of the more mature and flexible statistical tools. While GDP may not be able to defend its title as the most successful statistical indicator in the 21st century, odds are that national accounts will remain a key statistical framework for the analysis of our societies for many decades to come.

By Laurs Nørlund, Eurostat National and European Accounts Director

Like a house of bricks



Steven Keuning heads the European Central Bank's (ECB) Directorate-General for Statistics in Frankfurt. The main goal of the ECB's monetary policy is 'to maintain the purchasing power of the euro and thus the price stability in the euro area.' In order to do this, the ECB uses the European national accounts data in its daily work, as Mr Keuning told *Sigma* in an interview.

Steven Keuning heads the Directorate-General for Statistics at the European Central Bank. © ECB

'The national accounts figures at European level are of great importance to our work,' began Mr Keuning. 'Every month, the ECB takes policy decisions that affect the lives of hundreds of millions of people. The bank does so very carefully, analysing the economic and monetary data available to it at the time.'

The monetary analysis mainly utilises the monetary and financial statistics compiled by the ECB. Using data sent in by the European national central banks, the ECB compiles the euro area aggregates. The work, however, involves much more than just putting national data together, as Mr Keuning observed.

'While aggregating the available data, we consolidate, for instance, the cross-border transactions within the euro area. For us, German transactions with France or Belgium, and vice versa, are domestic and not foreign transactions.'

Mr Keuning said that, in its economic analysis, the ECB not only looks at key economic indicators, such as the harmonised index of consumer prices and the GDP, but also, more generally, at prices, costs, output and labour market data. 'Here the national accounts data are crucial for our work. Obviously, our focus is on the data relating to the euro area, because our decisions concern the euro zone.'

'As you know, the field of national accounts consists of non-financial and financial accounts,' continued Mr Keuning. 'The non-financial accounts are typically produced by the national statistical institutes and Eurostat, while the financial accounts are mostly produced by the national central banks and the ECB.'

Shared production of national accounts

However, the outstanding collaboration between the European Central Bank and Eurostat led both institutions to sign, in 2003, an updated memorandum of understanding. According to its terms, the national sector accounts for the

euro area are prepared by both Eurostat and the ECB together, with the ECB having as its primary responsibility the euro area's quarterly financial accounts.

'Of course, in our daily work we encounter many challenges,' said Mr Keuning. 'Although there is only one economy, not "physically" divided into financial and non-financial sectors, we statisticians initially produce two sets of data: the financial and non-financial accounts. This requires a constant need for cooperation and fine-tuning.'

Yet, as a result of meticulous efforts on the part of both the ECB and Eurostat, June 2007 marked a breakthrough for both institutions: the first publication of the integrated non-financial and financial quarterly euro area accounts, providing a consistent overview of its economic and financial development.

'The fact that we managed to develop an integrated system of non-financial and financial quarterly sector accounts brings Europe to the forefront of macroeconomic statistics worldwide,' said Mr Keuning. 'To give you an example: a system of non-financial quarterly accounts has existed in the United States for a long time now, as has a system of financial



Mr Keuning stressed that timeliness rather than greater amount of detail was paramount for the work of the European System of Central Banks in the areas of single monetary policy, financial stability and payment systems. 'This is why one of the top priorities of the ECB is to make the euro area accounts data available within 90 days of the end of a reference period,' he said. © Sarah C/PIXELIO (www.pixelio.de)



accounts. However, these two sets of accounts are not mutually consistent, a difficult situation considering that we are talking of the economy of only one country!

Mr Keuning said that the joint achievement of the ECB and Eurostat in the field of non-financial and financial European national accounts was unique. 'Our cooperation is going very well, also thanks to the advantages of modern technology — from electronic data exchanges to regular video conferencing, we are making sure that we stay in touch with each other on an almost daily basis.'

Improving data comparability high on the agenda

Efforts are now concentrating on the optimisation and completion of these accounts, as often the input from the financial part of the accounts does not match that of the non-financial part, a fact that keeps the ECB and Eurostat statistical experts permanently busy.

'Trying to unify those two sets of parallel data is like trying to fit the last brick into an almost finished wall of a house,' said Mr Keuning. 'The brick does not fit perfectly, but the rest of the building is complete, so you know you will need to slightly resize, or compute, the brick, whilst keeping the rules of consistency in place.'

And how does a statistician plug a hole caused by parts of the national accounts data missing from the system? Mr Keuning explained that data from more reliable sources are preferable in the process. 'Total estimates based on a sample survey of potato consumption in a country will, for instance, be easier to make than those regarding the consumption of beer, simply because people tend to underestimate the amounts of alcohol they drink,' said Mr Keuning. 'However, in this case, we can verify the figures by looking at the total alcohol production of the country plus its imports and minus its exports, also accounting for any changes in inventories.'

Similarly, in the financial sector, data from a reliable source (for example, data regarding long-term loans) are used to fill in the parts that are less reliable, such as data regarding

Mr Keuning said that the joint achievement of the ECB and Eurostat in the field of non-financial and financial European national accounts was unique. Efforts are now concentrating on the optimisation and completion of these accounts. 'Trying to unify those two sets of parallel data is like trying to fit the last brick into an almost finished wall of a house,' said Mr Keuning. 'The brick does not fit perfectly, but the rest of the building is complete, so you know you will need to slightly resize, or compute, the brick whilst keeping the rules of consistency in place.' © Phovoir

short-term trade credits. 'We combine information in order to get a reliable outcome,' said Mr Keuning.

Timeliness of national accounts data crucial

Together with the national central banks of all 27 EU Member States, the European Central Bank makes up the European System of Central Banks (ESCB). 'The ESCB compiles the euro area data aggregates,' explained Mr Keuning. 'The total of all available data is necessary for a proper analysis. What is more, this information has to be very timely — monetary decisions taken today cannot be based on data referring to a year ago.'

Mr Keuning went on to say that this stress on timeliness rather than greater amount of detail was paramount for the work of both the ECB and the ESCB as a whole, in the areas of single monetary policy, financial stability and payment systems.

'The importance of the timeliness of the so-called principal European economic indicators, comprising, among others, the national accounts data, cannot be overstated,' said Mr Keuning. 'This is why one of the top priorities of the ECB is to make the euro area accounts data available within 90 days of the end of a reference period.'

At the moment the ECB works with the data that are available only 120 days after the end of the reference period. 'That means that an interest rate decision for the euro area taken by the European Central Bank on 1 July 2008 was based on data coming from the fourth quarter of 2007, and not the first quarter of 2008 as we would wish,' said Mr Keuning. 'However, the date for the transition to 90 days has already been set by the ECB.'

Giving a good example

Mr Keuning said that there was a clear trend towards better cooperation between the national central banks and the statistical institutes in order to improve the availability and quality of euro area statistics. 'I have worked in the field long enough to see huge positive changes. By working closely together and jointly releasing quarterly euro area accounts, the ECB and Eurostat are giving an excellent example to other institutions on how to learn from and complement each other in the work that, ultimately, has the same goal — the production of top-quality statistical data.'

By Lukasz Augustyniak, Eurostat Communication Unit

Portugal — Proposing an innovative model of national accounts compilation

João Cadete de Matos heads the Statistics Department of the Portuguese Central Bank, Banco de Portugal, in Lisbon. In a recent meeting with *Sigma*, Mr Cadete de Matos outlined the characteristics of the Portuguese system in which, together with the National Statistical Institute (INE), Banco de Portugal is a fully recognised statistical authority.



João Cadete de Matos is Head of the Statistics Department of the Portuguese Central Bank. © EC C. Ardillac

Across Europe, central bankers regularly meet representatives of the NSIs to discuss the methodologies of compilation and also to jointly analyse statistical figures. However, the Portuguese Central Bank decided to push this cooperation further.

'We have long been actively engaged in promoting initiatives to share and reuse data sets among several institutions,' he observed. 'Following this logic we have been intensifying our cooperation with INE and the Ministries of Justice and Finance. This collaboration led to the creation, in January 2007, of the IES system.'

Mr Cadete de Matos started by saying that the methods of compiling national accounts in his country have undergone a major restructuring in the past couple of years, alongside the broader changes introduced to the statistical system in Portugal.

'Against the background of increased demand for more timely and detailed statistical data on the part of our users and a growing pressure to reduce the administrative burden as part of the efficiency drive started by the government, it was decided that decisive action had to be taken.'

He continued: 'In order to reduce the statistical burden on our respondents and to promote the flow of intra-institutional information sharing, a revolutionary reporting system for corporate information (IES) was created two years ago.'

The creation of the IES system in Portugal has an interesting history, which was sketched for us by Mr Cadete de Matos. 'As you might know, traditionally, most central banks are very concerned about the issues of privacy and independence and do not like to work closely with other state institutions, such as national statistical institutes (NSIs),' he said. 'At the same time, central banks are among the main users of the national accounts data produced by the NSIs.'

'On a daily basis, central banks deal with financial accounts as they are connected with the financial instruments they are involved with, such as credits or deposits,' said Mr Cadete de Matos. 'As such, national accounts can be seen as being primary "input" for the exercise of the main functions of any central bank.'

IES groundbreaking for data gathering

Formally created by a law decree, the IES ('Simplified corporate information') allows companies to fulfil four legal obligations through one e-mail submission. 'The IES allows for the electronic submission of information of accounting, fiscal and statistical natures that companies used to have to submit separately to the Ministry of Justice, the Ministry of Finance, Statistics Portugal and the Banco de Portugal,' said Mr Cadete de Matos.

'As a consequence, these institutions share an invaluable database including the information companies have to provide regarding their annual accounts,' he explained. 'In the end, overall social costs are reduced and a better knowledge of the situation of companies is made available.'

Mr Cadete de Matos said that his bank has greatly benefited from the new system as more companies started to register with the IES and better data quality was achieved. 'The importance of the project was highlighted when the Portuguese Prime Minister attended the presentation of the first IES results in mid-2007,' he added.

Parallel to the creation of the IES, Banco de Portugal and INE have deepened their cooperation in the field of statistics production even further. 'We are involved in several arrangements for producing statistics: financial and non-



'The IES allows for the electronic submission of information of an accounting, fiscal and statistical nature, that companies used to have to submit separately to the Ministry of Justice, the Ministry of Finance, Statistics Portugal and the Banco de Portugal,' said Mr Cadete de Matos. Pictured is a tram in Lisbon. © Ragingbull/PIXELIO (www.pixelio.de)

financial accounts, government finance statistics, surveys of tourism expenditure and cross-border movements and simplified corporate information.'

Administrative data more easily available

The new law on the national statistical system, formally approved in May 2008, established the use of administrative data for statistical purposes and reinforced the need for co-operation between both institutions.

The law introduced substantial changes to the previous legal framework, at the same time recognising Banco de Portugal as a statistical authority. 'It is a great help for us but also a great responsibility,' said Mr Cadete de Matos. 'I remember how we used to have complaints regarding the data quality when we were users of the national accounts data. Now we have become statistics producers as well and, as such, got round to seeing the problems on this side.'

Asked about the international feedback regarding the evolution of the 'Portuguese way,' Mr Cadete de Matos said that so far it was very positive if at times regarded with reservations. 'We heard from the colleagues in other central banks in Europe, who, generally, praised our initiative as innovative and a major step towards the reduction of the administrative burden. However, I do realise that our model might not be applicable to other countries, where the institutional and legal arrangements are different to those in Portugal.'

Mr Cadete de Matos concluded by saying that he was confident that the interinstitutional cooperation in the field of data production in his country would serve as an indicator of things to come.

'In the time when many European institutions increase requirements in numerous statistical domains, including national accounts, we have demonstrated that it is possible to become more timely and efficient and reduce the statistical burden for both producers and users of national statistics.'

By Lukasz Augustyniak, Eurostat Communication Unit

Supply and use tables — An indispensable tool for producing reliable national accounts



Measuring production in an economy is a daunting but essential task for any statistician wanting to calculate GDP. To capture this process, where input of labour, capital, goods and services are used to produce outputs of goods and services, you need a vast amount of information. For this reason statisticians and economists use a statistical and analytical framework called supply, use and input-output tables. Maria Forgon at the Hungarian Central Statistical Office has 29 years' experience in this field. *Sigma* asked her to unveil the secrets of these tables and make this complex statistical domain understandable for the layman.

Maria Forgon is a senior national accounts expert at the Hungarian Central Statistical Office. © Hungarian Central Statistical Office

‘These tables are very useful tools for any statistician or economist working with national accounts. Supply and use tables serve primarily statistical purposes and provide an integrated framework for checking consistency and completeness of national accounts data. Input-output tables are used as a tool for economic, social or even environmental analysis,’ said Ms Forgon.

The input-output analysis, developed by the economist Wassily Leontief in the 1930s, describes inter-industry relations in an economy. It explains how different industries depend on each other and how they supply each other with input as well as use each other's output.

The input-output framework actually consists of two different but related sets of tables: supply and use tables and the symmetric input-output tables that are derived from the supply and use tables.

‘The supply and use tables provide the main macroeconomic aggregates such as GDP, components of value added and output by industry, import, final consumption, gross capital formation and export,’ explained Ms Forgon.

The supply table describes the supply of goods and services, which are either produced in the domestic industry or imported. The use table shows where and how goods and services are used in the economy. They can be used either

in intermediate consumption — meaning in the production of something else — or in final use, which in turn is divided into consumption, gross capital formation and export. Furthermore the use table shows the income generated in the production process.

A concrete example: the supply and use of cars

To make it concrete, imagine an economy with three industry sectors: agriculture, manufacturing and services, and for simplicity we follow only one product in our example: cars. These cars are either produced domestically or imported. That is a short description of the supply side.

The use table shows how the cars are used in the economy. Firstly there is intermediate consumption, which means that the cars are used in the production of another product. For example, when a car is transformed and sold as a camping car, then it has been used by the manufacturing industry.

Secondly there are different sorts of final use. When a car is sold to a consumer, then it has been used for final consumption. But when a car is sold to a catering firm or a farmer for professional use, it has been used as an investment. Finally the car can be exported to another country. The sum of all these different uses should equal the total supply for each product. Since supply and use are recorded in monetary



'Supply and use tables have several advantages. They increase quality, which means they produce more reliable estimations and smaller revisions. They also increase transparency, by offering detailed information about the statistical production process. Hence they improve efficiency in the production of statistics,' said Ms Forgon.

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provements in the Hungarian national accounts and has high priority,' observed Ms Forgon.

terms it is required that both are valued in the same way, either in basic prices or at purchasers' prices.

Statistical benefits of supply and use tables

Even though the mathematics applied in the input-output analysis is not simple, the data requirements are the real challenge. In our example we followed one product and three industries, but in reality each Member State supplies Eurostat with tables distinguishing 60 products and 60 industries. Behind this publication level there is a more detailed working level with thousands of products and hundreds of industries.

By comparing the individual supply and use of all these products and the different industries, inconsistencies are found that at a more aggregated level might have been netted out. The supply and use tables are therefore a very adequate method to calculate GDP and other aggregates.

'Supply and use tables have several advantages. They increase the quality, which means they produce more reliable estimations and smaller revisions. They also increase transparency, by offering detailed information about the statistical production process. Hence they improve efficiency in the production of statistics. Therefore, it is recommended that supply and use tables are compiled as an integral part in the calculation of national accounts figures. Full integration is one of the strategic elements of the recent im-

provements in the Hungarian national accounts and has high priority,' observed Ms Forgon.

In order to make GDP calculations more reliable, statisticians use three different methods. The problem is that these three methods often generate different results. In order to eliminate these differences and to find the most accurate result, statisticians often use supply and use tables.

'Supply and use tables are a balancing framework that reconciles the three methods of GDP estimation that are used in national accounts — the production, income and expenditure approach — making sure you get the same results from every method.'

However, data used in these tables must be consistent; otherwise the result will not be reliable. To ensure consistency in real data can sometimes be a problem for statisticians working with national accounts. Data are collected from many different sources which do not necessarily apply the same definitions, classifications and concepts. For example, information concerning company production collected in business surveys is often not consistent with information on company turnover found in tax reports. But the Hungarian Central Statistical Office has found a solution to this problem.

'Studying international examples, we have found that the best practice for solving this problem is to create an intermediate database that reconciles business survey and tax data. The database is used by statisticians working both with structural business statistics and with national accounts. It guarantees that statistics generated in these two domains are consistent,' said Ms Forgon.



The Chain bridge in Budapest. © H. Schröder

Analysing the economy with input-output tables

Supply and use tables are not only used for calculating and checking national accounts data, they also serve as a database from which data used in macroeconomic models and impact analysis can be derived. In this case the supply and use tables are rearranged in the form of symmetric input-output tables.

Basically four models involving different assumptions on technology and sales structure (market shares) can be used to turn the supply and use tables into symmetric input-output tables. They are either presented in the form of a product-by-product or industry-by-industry matrix.

'For example, if you want to analyse the effect on the economy of an increase in the oil price, input-output tables are

very useful. They show you the direct effect of the oil price increase on all industries that use oil as an input. They also show the indirect repercussions on sectors which only indirectly use oil in their products. For example, the food industry may not directly require any oil inputs, but it requires transport services where oil is intensively used. Therefore the food industry is indirectly affected by the price increase,' explained Ms Forgon.

In order to further improve the statistical and analytical benefits of the input-output analysis, Ms Forgon and many other statisticians in Europe are currently busy implementing new classifications of both economic activities (NACE) and products (CPA) which will more closely reflect the structure of the European economies.

By Johan Wullt, Eurostat Communication Unit

Regional accounts — Finland leads the way

Regional accounts give a detailed picture of a region's economy and are a major information source for people who work in economic development and policy or who teach and study economics. The regional GDP is also the basis for the distribution of the European Union's regional funds. Statistics Finland is renowned for its high-quality regional accounts in the European Union. *Sigma* talked to Mikko Koutaniemi, senior national accounts statistician at Statistics Finland, and to Andreas Krueger, team leader for regional accounts statistics at Eurostat.



Andreas Krüger is the team leader for regional accounts statistics at Eurostat. © EC C. Ardillac



Mikko Koutaniemi is a senior national accounts statistician at Statistics Finland. © Statistics Finland

In national accounts you can measure economic activity in three different ways: from the production, income or expenditure sides. Mr Krüger compared the accounts to a mother baking a cake (yes, it is still mostly mums who bake cakes!).

'Think about national accounts as a big family where the mother bakes a strawberry cake and gives a piece to each of her five children.

'If you would like to measure how much cake there is, you have three options. The first and easiest is to go to the kitchen and measure what ingredients the mother uses to bake the cake. You weigh how much flour, sugar and cream and how many eggs and strawberries she uses. This is the production approach.

'A second way would be to check how much cake each family member received — the income approach. This becomes a bit more complicated than just measuring everything in

the kitchen. You have to go to their rooms and see how big the pieces really were. If you are lucky, everybody will tell you precisely how much he or she received. In real life, however, there are always people who under-declare their income...

'The third way is to try and measure how much they ate — the expenditure approach. In principle you ask each one how much they ate. However, maybe they do not remember exactly how much they ate. Maybe they saved some cake to eat later. Or maybe they traded cakes with the neighbour's kids, who received a freshly baked apple pie, but prefer strawberry cake. Clearly measuring the level of expenditure is the trickiest option at a regional level.'

In national accounts the production, income and expenditure approaches are used and checked against each other. However, in regional accounts most EU countries use the production approach and to some extent the income approach to measure the total value of all goods and services produced in the regions. This is because all data are not al-

ways available at a regional level. One obvious example is how to measure imports from and exports to a region. Another is the flow of income between regions, as commuting can make a big difference to received and paid compensation of employees in a region.

In theory the regional accounts should add up to the national figures, which is the situation in Finland. However, for many countries this is not always the case. Therefore, the regional figures are grossed up or down to the national level. If the regional figures are 97 % of the national ones, all regional figures are adjusted with the same amount to match the national one at the end.

Regional GDP, employment, productivity

The output of regional accounts is first and foremost regional gross domestic product (GDP). However, the accounts include

other types of data. In Finland the accounts also comprise detailed industry information on output, intermediate consumption, value added, gross fixed capital formation (investments net), hours worked and information on household incomes.

'The most popular and known indicator is the regional GDP per inhabitant. Regional growth rates, employment and household income figures are also regularly requested topics,' said Mr Koutaniemi.

'We also publish another indicator, which gives an easy approach to regional economic development. It is called the GEP-deviation indicator. It is calculated from gross value added (GVA), employment and population by comparing regional growth percentages with those of the whole country and by adding up the differences in data for the whole country and the regions,' he continued.

At the European level, the regional GDP per inhabitant is *the* indicator which determines which regions are supported



The most popular and known regional accounts indicator both at a European level and in Finland is the regional GDP per inhabitant. 'Regional growth rates, employment and household income figures are also regularly requested topics,' said Mr Koutaniemi. Pictured is the Helsinki waterfront. © VisitFinland

through grants from the EU budget. In principle those regions which have a GDP per head less than 75 % of the EU average receive funding.

Finland goes one step further

GDP is the sum of GVA and taxes (value added taxes and other taxes on products) less subsidies on products. In most Member States the national taxes and subsidies on products are distributed on the basis of the relative size of total regional GVA to all the regions. However, in Finland a new methodology was introduced in 2006, which means that taxes and subsidies are distributed based on regional expenditure.

'We are able to use this method because we made an input-output study at a regional level for the year 2002. The study gives us the possibility to extrapolate taxes and subsidies on products at a regional level over the time series,' said Mr Koutaniemi.

The result is that the regional GDP data users find differences on Eurostat's and Statistics Finland's homepages.

'We believe the study, which took nearly four years to carry out, was worth it because of the increase in accuracy and quality of the regional accounts. Our users are happy and it is possible that another study will be carried out in the coming years.'

Regional details

Regional details in the accounts vary for different purposes. In Finland, data are published down to local administrative unit (LAU) 1 level of detail. This corresponded to 77 sub-regional units in 2006. In comparison the level of detail used by Eurostat are NUTS (nomenclature of units for territorial statistics) 3 and NUTS 2 level, which for Finland corresponds to 20 and 5 regions respectively.

Finnish users are quite satisfied with the local detail of the data, but many would like to have even more detail information. Although municipalities have been merged, users are still interested in the local situation.

'We are lucky in Finland. Our source statistics are of a very high quality. Therefore, it is often possible for us to use the same level of detail as they do. There is no need to aggregate the data before we use it,' explained Mr Koutaniemi.

'In regional accounts there are normally certain trade-offs. You cannot provide as much information at a regional level

as you can at a national one. What you win in regional detail, you lose in accuracy and types of data.'

Not only snapshots

At the moment, the European system of accounts (ESA) 1995 requires regional accounts data to be published only in current prices. However, many users would like to have regional GDP also in volume, which excludes the effect of inflation. In Finland, regional accounts data are released in both current and constant prices.

'The advantage with data published in constant prices is that we not only get a snapshot of the economy, we can also see the GDP growth in different regions over the years,' pointed out Mr Koutaniemi.

Timeliness

The regional accounts figures are transmitted with a delay of 24 months at a European level and published after 26 months. The delay is caused by the fact that regional accountants have to wait for other statistics which they use as sources and the final national accounts figures, before they can release their own final figures.

'In most Member States the backbone of regional GVA compilation is the structural business survey, which has a delay of 18 months. This means that in June 2008 the countries report data for 2006,' said Mr Krüger.

In Finland the first estimates of the regional accounts are published 15 to 16 months after the end of the year in question and the final figures one year later.

'Users are never happy about delays, but the reason for them is that we depend on the input from structural business and municipality statistics, as well as the final national accounts figures,' observed Mr Koutaniemi.

By Annika Östergren Pofantis, Eurostat Communication Unit

Production of national accounts in Cyprus

Cyprus is one of the relative newcomers to the European Union. The country joined the EU four years ago, together with nine other States. However, due to its size, it differs significantly from many other EU members. *Sigma* met George Zeitountsian, Head of the National Accounts and Foreign Trade Division at the Statistical Service of Cyprus, to find out more about the idiosyncrasies of national accounts production in Cyprus.



George Zeitountsian is Head of the National Accounts and Foreign Trade Division at the Statistical Service of Cyprus.
© Statistical Service of Cyprus

in timeliness resulted in inferior quality of the data.

Speaking of the country's individual experience in the production of national accounts, Mr Zeitountsian said that, in comparison with the older EU members, Cyprus lacked experience in the efficient compilation of the more specialised tables, contained in the ESA 95 transmission programme.

Mr Zeitountsian started our meeting by stating that, in general terms, the size of the country was not a decisive factor in the process of the production of national accounts. 'Whether you look at Germany, France, Cyprus or Malta, the challenges are the same,' he said. 'We all have to adhere to the same EU regulations.'

However, seen from the perspective of European aggregate production, the role smaller countries play is naturally different from the bigger ones, as their combined GDPs in pure numerical terms make up less than 1 % of the EU total. 'But when examined in the geographical or regional context, the statistical figures produced by smaller members gain in importance,' Mr Zeitountsian clarified.

'What is common to all of us, irrespective of the size of the economy, are specific problems encountered in the process of the national accounts production and in the ways of making the data-gathering operation smoother.'

Mr Zeitountsian used the example of the relationship between timeliness and quality of data production. He said that Cyprus advocated the adoption of a 'golden line' between timeliness and quality, since it was clear that, beyond a certain limit, gains

Like a traveller arriving late at the train station

Mr Zeitountsian spoke of the initial difficulties in the national accounts production resulting from the accession of his country to the European Union. 'We faced a relatively short period of time and a lot of different tasks to be accomplished with fairly limited resources.'

'Back then, our National Accounts Division resembled a traveller who arrived late at the train station, holding suitcases in both hands and desperately trying to catch the departing train. Our objective was clear: to get on that train!' he remarked. 'We made it, but it was a very difficult period for all of us.'

However, according to Mr Zeitountsian, in the meantime the situation has improved significantly. Cyprus has reached a high level of compliance with EU regulations despite restrictions on the recruitment of new staff.

'In the last couple of years, we have greatly benefited from good practice in other Member States, valuable help on the



'In a small economy like Cyprus, imports have a significant weight on the GDP estimate. Any distortion of this estimate, or any other indicator that is expressed in relation to this (such as deficit, debt, etc.), has an impact on the macroeconomic picture and economic policy,' said Mr Zeitountsian. © *Press and Information Office — Republic of Cyprus*

part of the Eurostat experts and also from adopting the recommendations and guidelines issued by Eurostat.'

Quality counts

Mr Zeitountsian went on to say that he was confident that the quality of the national accounts today produced by his department was excellent. 'As far as the quality factor is concerned, we were offered no concessions by anybody. After all, the national accounts data are the cornerstone of the economic and political decisions taken at both European and national levels,' he pointed out.

'For that reason the Community regulation, very wisely, proposes a set of measures and mechanisms that guarantee the necessary quality. They include writing a gross national income inventory referring to the practices and sources used for its computation, country visits for the verification purposes of the inventory, etc. Thus, all countries, irrespective of their size, must implement the regulation and compile the national accounts accordingly.'

External trade data crucial

Asked about the experiences in the field of compiling the external trade figures, Mr Zeitountsian said that for Cyprus, external trade, and specifically import statistics, were very important as imports accounted for almost 41 % of the country's GDP.

'In a small economy like Cyprus, imports have a significant weight on the GDP estimate. Any distortion of this estimate, or any other indicator that is expressed in relation to this (such as deficit, debt, etc.), has an impact on the macroeconomic picture and economic policy,' he emphasised.

'What raises our concern are the asymmetries in imports observed with some of our trading partners,' said Mr Zeitountsian. 'What this means is that some of our imports from

specific countries are much lower than their reported export figures to Cyprus, which is problematic.'

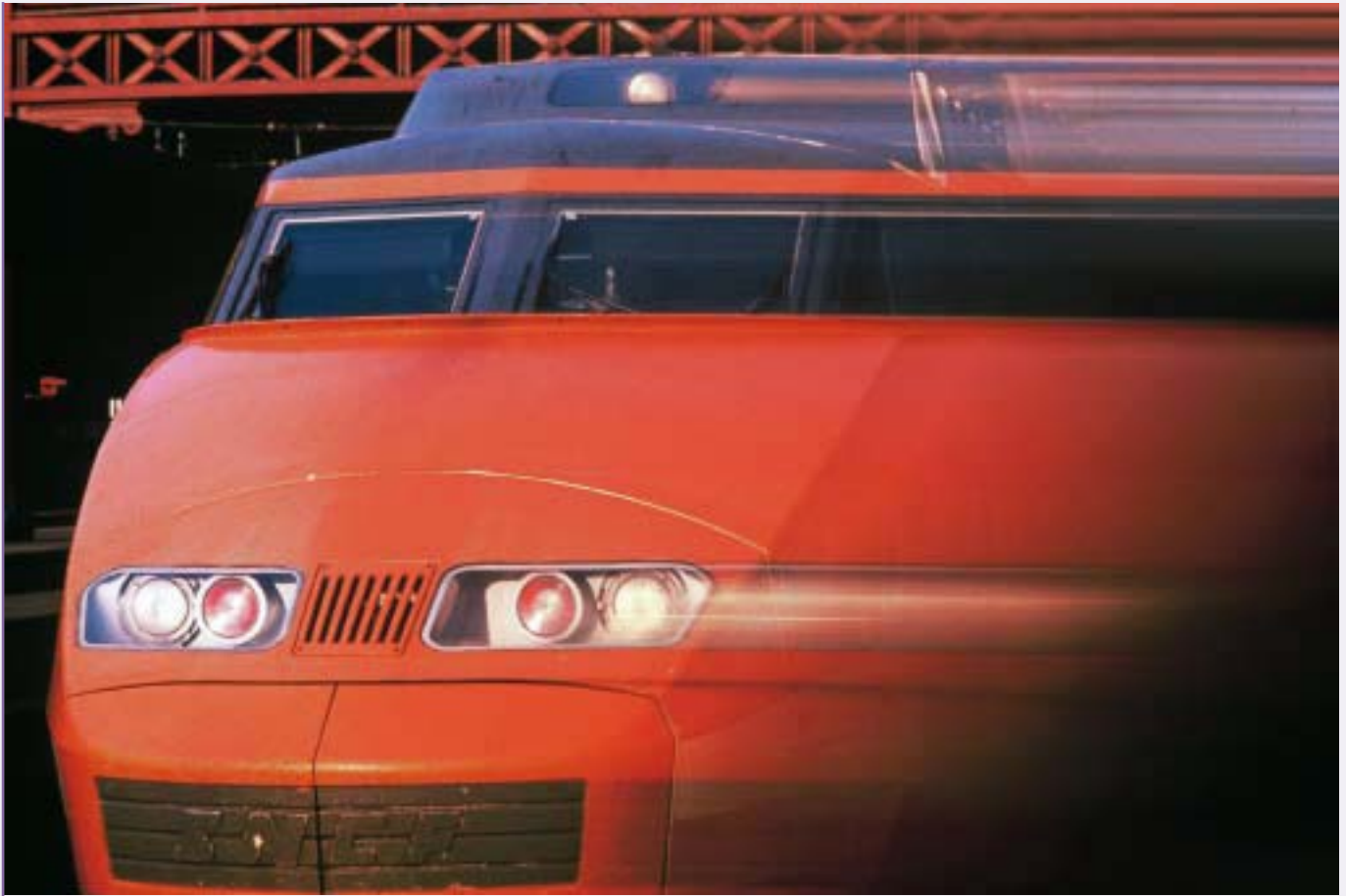
According to Mr Zeitountsian, this situation showed not only the need for closer cooperation between the European countries in solving the problem, but also the necessity to establish a centralised control system between the national statistical institutes and Eurostat in order to monitor asymmetries and find ways of eliminating them.

Intrastat system helpful but in need of simplification

The Intrastat system is used for collecting statistics on the trade in goods between the 27 Member States of the European Union. However, for a smaller country like Cyprus, meeting the system requirements can present serious practical problems. Therefore Cyprus is actively participating in the methodological discussion, involving Eurostat, aimed at reducing the administrative burden produced by the Intrastat system.

'Several burden-reduction measures were proposed for consideration,' said Mr Zeitountsian. 'The raising of exception threshold level in value (i.e. the level above which the traders are obliged to submit detailed Intrastat declarations) has been considered as the most viable solution in the medium term for reducing the burden on enterprises, while maintaining a satisfactory level of data quality and coverage.'

However, while the simplified rules would help the daily operations of the National Accounts and Foreign Trade Division, they would also mean that the loss of information due to the reduction of the threshold levels would have to be replaced by the far less detailed estimation methods. 'Thus the danger of creating additional asymmetries in the system would become very real,' he remarked.



Mr Zeitountsian compared the period before the EU accession to the National Accounts Division arriving late at the train station, holding suitcases in both hands and desperately trying to catch the departing train. 'We made it, but it was a difficult period for all of us.' © European Commission

Towards the revision of ESA 95

'It is clear that the production of national accounts poses a heavy burden for any statistical office in Europe, including ours,' said Mr Zeitountsian. 'The revision of ESA 95, likely to be implemented in 2014, will mean that the capacities of smaller countries such as Cyprus will get stretched to their limits.'

He clarified that some of the 44 additional topics soon to be implemented, such as pensions, the capitalisation of research and development or military expenditure, would require the establishment of a new infrastructure for data collection and compilation. 'A simple priority setting, planning and resourcefulness will be inadequate. We will need to redesign the present arrangements and seriously redistribute resources within the National Accounts Division.'

Challenges of the near future

Mr Zeitountsian added that, in the near future, Cyprus will face the difficult task of further handling the statistical burden with inadequate staff levels. 'In addition to the low number of staff positions, the process of new recruitment is

proceeding very slowly due to complicated civil service procedures,' he explained.

Among the challenges ahead, Mr Zeitountsian saw the increasing requirements of the main users such as the European Central Bank as well as the additional work burden passed to NSIs through the committees organised at European level, such as the SPC.

To make things easier in the short run, Cyprus continues to hire temporary staff and relies on the technical assistance received from experts. In addition there is close cooperation with the national accounts departments of other member countries, such as Greece, Italy and Austria.

Mr Zeitountsian told *Sigma* that he was optimistic regarding the future challenges. 'We are aiming to increase our productivity through the simplification of tasks and automation of certain routines. We are confident enough that with the accumulated experience, the improved statistical infrastructure and the additional human resources we will be able once again to confront successfully the new challenges!'

By Lukasz Augustyniak, Eurostat Communication Unit

Satellite accounts sharpen the focus



Frits Bos is a private consultant in national accounting and economist at the Netherlands Bureau for Economic Policy Analysis. © ECA. Östergren Pofantis

National accounts have very good standard tables, concepts and classifications, which are internationally recognised and harmonised. They are very useful for macroeconomic policy issues, like economic growth, inflation, public finance, balance of payments and employment. However, they can be insufficient when you want to highlight specific economic phenomena,' said Frits Bos, private consultant in national accounting and economist at the Netherlands Bureau for Economic Policy Analysis.

Satellite accounts exist for many different areas, among which are accounts on tourism, agriculture, health, transport, education, and research and development but perhaps the most well-known example are the environmental accounts (see also article on p. 36).

'Satellite accounts and tables can meet more specific data needs by providing more detail, rearranging concepts from the standard framework or by providing supplementary information. For some purposes, it may also be necessary to deviate from some of the standard national accounting concepts to improve the link with economic, theoretical, administrative or policy concepts.'

'Satellite accounts are compiled by combining the standard national accounts statistics with all kinds of statistics and administrative data on a specific area. A major value added of satellite accounts is therefore that they link such data on specific policy issues to macroeconomic issues, like economic growth and public finance,' explained Mr Bos.

The first experiments with satellite accounts and tables date back to work by the French statistical office during the mid-

Satellite accounts have nothing to do with rocket science, orbiting Earth or keeping track of the number of astronauts in the world. They are statistical tools, which are used by national accountants to analyse certain events, which cannot be identified or analysed through normal national accounts.



Mark de Haan is a national accounts expert at Statistics Netherlands. © ECA. Östergren Pofantis

1970s, but the area has since matured and satellite accounts are now broadly accepted. In fact, both the system of national accounts (SNA) 2008 and the revised European system of national accounts (ESA) will include new chapters on satellite accounts drafted by Mr Bos.

'In ESA 95 the broad concepts of satellite accounts were mentioned, but in the revised version we go more into detail. We provide examples and tables to make it more concrete and useable and we mention some of the problems you can encounter when compiling satellite accounts.'

Pioneer work at Statistics Netherlands

Statistics Netherlands is one of the frontrunners when it comes to the development of satellite accounts. Mr Bos said that one of the reasons for the advanced agenda was the importance the Dutch government has attributed to national accounts for policy planning since the beginning of the 1950s.

The Dutch Statistical Office is, for example, known for its pioneer work on environmental accounts. At the end of the 1980s, Statistics Netherlands 'invented' the national account-



Satellite accounts have nothing to do with space. They provide more detail by rearranging concepts from the central national accounts framework or by giving supplementary information. The most common satellite accounts focus on the environment, tourism, agriculture, health, productivity, and research and development. © *European Space Agency*

ing matrix including environmental accounts (Namea), which is a system that creates links between national accounts and environmental statistics. Namea shows the relationship between a number of important economic indicators, for example gross domestic product, consumption and trade balance and a range of environment pressures. The system is now commonly used in the EU.

'Statistics Netherlands and its users consider both national and satellite accounts important and therefore we have been able to do a lot of research in this area,' remarked Mark de Haan, national accounts expert at Statistics Netherlands.

'The environmental accounts are still our flagship accounts. They are well established and mature. Today Statistics Netherlands is involved on the international arena, where I chair the London Group on Environment Accounts, which brings together a number of international experts. The group's task is to provide input for the updating of the environmental accounts equivalent of the SNA: the system of integrated environmental and economic accounting (SEEA),' he said.

In total 23 issues, such as how to measure the depletion of natural resources or the value of fish stocks, will be updated in the revised SEEA. By the end of 2009 the outcome of these discussions will be reported to the United Nations Committee of Experts on Environment Accounts and later on adopted by the United Nations Statistical Commission. The first volume of the revised SEEA is expected to be released in 2012.

In-depth analysis in many areas

Apart from the environmental accounts, Statistics Netherlands has established the social accounting matrix, which permits further analysis of the labour market and of households: their composition, sources of income, consumption expenditure patterns, etc.

'Simply put, social accounts provide data on social dimensions of the economic system. Compared with the standard national accounts, they add information on how income is distributed among the various types of households and how this household income is subsequently spent or saved,' explained Mr de Haan.



The knowledge economy is also under scrutiny through special accounts. In these accounts you can follow how investment in knowledge and new innovation affects productivity. Also information and communication technologies are made visible and the accounts can be used to see their role in productivity.

In the knowledge satellite accounts, special attention is given to research and development (R & D). In fact information on R & D may in the future become part of the ESA mother accounts.

'Today R & D is recorded as a cost (intermediate consumption) in national accounts. However, R & D gives benefits to the company in the future and is therefore more like an investment (capital formation) which will pay off a few years down the line and add to production growth. As a consequence R & D expenditures also have to be depreciated, just like investments in machinery. This means that determining the lives of knowledge requires special attention,' said Mr de Haan.

Statistics Netherlands is one of the frontrunners when it comes to the development of satellite accounts. The environmental accounts are their flagship accounts, but many other areas are also studied. For the past two years, Statistics Netherlands has provided tourism accounts, which give an overview of the supply and use of goods and services for various types of tourism and their importance for value added, domestic employment, trade balance, government finance and business income. © 2004 Netherlands Board of Tourism and Conventions

For the past two years Statistics Netherlands has also provided tourism accounts, which bring together all information on tourist activities: data on transport, hotels, restaurants, entertainment parks. The data are also compiled to provide an overview of the supply and use of goods and services for various types of tourism and their importance for value added, domestic employment, trade balance, government finance and business income.

Analysing productivity in detail

A major use of national accounts is to describe, monitor and analyse productivity growth.

'It is essential to understand changes in industry structure and to make policies which stimulate productivity growth, while also taking into account other policy considerations, such as environmental issues and equality,' Mr Bos pointed out.

The national accounts provide a solid basis for constructing the so-called growth accounts for measuring productivity at industry branch and macro level. However, Statistics Netherlands — like many countries — is setting up special productivity accounts to better measure and analyse growth and productivity. These accounts are developed in parallel with the Klems growth and productivity accounts.

EU Klems

Klems is a pan-European statistical and analytical research project, which focuses on the analysis of productivity and growth accounting in the European Union at industry level. The aim is to create two databases containing information on economic growth, productivity, employment creation, capital formation and technological change for all European Union Member States and the USA, Japan and Canada.

Klems data will be used for analytical and policy-related purposes, in particular for studying the relationship between skill formation, technological progress and innovation on the one hand, and productivity on the other.



Mark de Haan thinks Statistics Netherlands will work on human capital in the future, as most economists view expenditure on education as one of the most crucial investment categories in knowledge-based economies. 'Satellite accounts are an excellent way to experiment with the possibilities of accounting for human capital,' he said. © Phovoir

'Our work on productivity is evolving. The first data were published in 2007. Now we are looking into extending our capital accounts beyond the fixed assets by including estimates for inventories, land and mineral reserves. We will also extend our labour accounts by providing more detailed data on compensation of employees and hours worked subcategorising the active labour force by different age groups (as a proxy of work experience) and various levels of educational attainment. One may expect the upgrading of our labour force to be an important source of economic growth which needs to be measured as such,' said Mr de Haan.

An ageing society and human capital on the horizon

Statistical research at Statistics Netherlands will also focus on the area of the ageing society. This is a subject which is getting more and more attention, as the links between ageing, healthcare and social exclusion are major issues for European policymakers.

'I can also imagine we will work on human capital in the future. Most economists will regard expenditure on education as one of the most crucial investment categories in knowledge-based economies. Although there are good reasons, the international system of national accounts does not consider education expenditure as capital formation. Satellite accounts are an excellent way to experiment with the possibilities of accounting for human capital,' commented Mr de Haan.

It is clear that satellite accounts are here to stay and that they are constantly developing — both maturing as well as expanding to new areas. Both the revised European system of accounts and SNA 2008 will include new chapters on the subject and will provide better tools for policymakers.

By Annika Östergren Pofantis, Eurostat Communication Unit

For further information:

<http://www.cbs.nl>
<http://www.cpb.nl>

Environmental accounts — A beautiful tool to study the links between the environment and the economy

Environmental accounts analyse the links between the environment and the economy at regional, national or European level. The accounts are, for example, used to see how the growth in an economy — increased GDP, larger labour force and higher use of energy — has affected the use of natural resources. The latter can be measured by the expansion in land used for construction and the increase in both energy and raw material consumption. The environmental accounts are also used to analyse the effect of economic policy measures, such as what impact a tax for industry would have on the generation of waste or air emissions.



The aim of environmental accounts is to outline the potential impact of economic and social activity on the environment. Pictured is Eurostat's Environmental Accounts Team: Alcino Gomes, Julie Hass, Ute Roewer, Dietmar Maass, Julio Cabeca, Claudine Delaval and Elisabeth Møllgaard. © ECC. Ardillac

National accounts provide an all-inclusive framework within which economic data can be presented in a coherent and consistent manner. They use internationally agreed standards and present in a condensed way information about how the economy works and is developing. Often the information is summarised in one indicator: gross domestic product (GDP).

The beautiful feature of environmental accounts is that they are (mostly) compiled by reorganising already existing data

concerning the economy and the environment in a way that is consistent with the accounting principles of national accounts. Satellite accounts on environment, agriculture, forestry, energy, etc. are produced in order to study particular parts of the economy in greater depth and to complement the general purpose of national accounts.

'The aim of environmental accounts is to outline the potential impact of economic and social activity on the environment. The idea is to list, in quantifiable terms, for example, the



Eurostat deals with three types of environmental accounts: the economic environmental accounts, the physical environmental accounts, and the environmental assets accounts. The last are used to monitor the rate of depletion of, for example, forests.

© Phovoir

amount of pollution produced by industry and households, which may in turn be compared with employment and the value of output produced by these sectors. Policymakers can then decide where it is most efficient to act,' explained Julio Cabeca, Head of Section in Eurostat's Environmental Statistics and Accounts Unit.

In recent years European policies are to a larger and larger degree focusing on how the European economy can be developed in a sustainable direction.

'At European level one major focus right now is on climate change and how it will affect European economies,' remarked Elisabeth Møllgaard, Statistical Officer dealing with environmental accounts at Eurostat.

In this context environmental accounts data can be used to analyse which sector is emitting the most greenhouse gases. Carbon dioxide, CO₂, is a major contributor to global warming. Eurostat data show that the electricity, gas and water supply industry was responsible for around 40 % of CO₂ emissions in the EU in the last couple of years. Together with the manufacturing industry they accounted for two thirds of total CO₂ emissions. The data also show that environmental pressure in relation to the economy was considerably higher

for the electricity, gas and water industry than for all other industries. This is calculated by looking at the share of gross value added for the sector and the amount of CO₂ emitted by the industry.

Three different accounts monitor the flows

The environmental accounts methodology is mainly based on the system of integrated environmental and economic accounting (SEEA), endorsed by the United Nations Statistical Commission. The SEEA describes in detail how basic statistical data on environmental issues, economic issues and so forth can be reorganised into accounts that are consistent with national accounts.

Eurostat's environmental accounts are organised in three sections. The first is called economic environmental accounts and includes transactions related to the environment which are not shown separately in national accounts. Examples are investments in cleaner production technology, environmental taxes, and goods and services produced specifically to improve the environment. This could be windmills or solar panels, for example.

The second group is the physical environmental accounts, which follow all the material that flows through the economy. These accounts include both the economy's needs and the resulting residuals, such as emissions and waste. The accounts also help monitor consumption of natural resources, and show whether the amount of material passing through the economy is increasing, if it is increasing faster than the growth rate of the economy, or whether it is increasing in per capita terms. The accounts can be useful when trying to minimise the generation of dangerous waste, for example, and are an important tool in the follow-up of sustainable development.

The third group is the environmental assets accounts. In Eurostat they include data on the volume of forests, water and subsoil assets — such as oil and gases. These accounts are used to monitor the rate of depletion of a particular environmental asset.

Harmonising environmental accounts in Europe

Environmental accounting is getting more and more attention and the European Commission has decided to develop the use of environmental accounts further. For this purpose Eurostat cooperates closely with other European Commission services, such as those for environment and the Joint Research Centre, as well as the European Environment Agency. A new European strategy on environmental accounts is in the pipeline, which will be adopted by the Statistical Programme Committee by the end of 2008.

At EU level, data collection of environmental accounts is not mandatory but the aim is to obtain full data coverage for, for example, expenditure, air emissions and material flow accounts by 2010.

'A proposal to develop statistical legislation will be presented to the Statistical Programme Committee by the end of 2008 in order to ensure the stability of data coverage in the long run,' said Mr Cabeca.

Simultaneously, a review of the environmental accounts bible — the system of environmental and economic accounts (SEEA) — is carried out. The work is conducted in a joint effort with the United Nations Statistics Division, the International Monetary Fund, the OECD and the World Bank. The outcome will be a revised version of the *Handbook of national accounting — Integrated environmental and economic accounting*, which is expected in 2012.

'Much effort is being put into harmonising environmental accounts results across Europe, including links to other areas of statistics as well as harmonised production of environmental



At European level, one major focus right now is how climate change will affect European economies. © Michael Coch/PIXELIO (www.pixelio.de)

accounts and improved comparability and timeliness,' commented Mr Cabeca.

'There is indeed political interest in environmental accounts and in many countries they are well developed. Top of the class are countries such as Germany, Italy, Norway, the Netherlands and Sweden, where politicians have realised the value of the accounts as an analytical tool,' said Ms Møllgaard.

Finally Mr Cabeca said that due to its internal coherence and consistency the system of integrated environmental and economic accounting is favoured by Eurostat for delivering sets of indicators that can be used in policymaking.

'SEEA indicators are stronger and better than those that are developed in isolation and do not come from an integrated system. They have the potential to show the impact of different policies in detail. Therefore, they suit evidence-based policymaking better.'

By Annika Östergren Pofantis, Eurostat Communication Unit

For further information:

<http://ec.europa.eu/eurostat>

Look under 'Environment and energy'/'Environmental accounts'

Beyond GDP — The ecological footprint?



In the last decades, criticism against the use of gross domestic product (GDP) as the sole indicator of economic growth has increased. Geoffroy De Schutter, Programme Director at the World Wide Fund for Nature (WWF) Belgium, explained the background and sketched one of the alternatives: the ecological footprint.

Geoffroy De Schutter, Programme Director at the World Wide Fund for Nature (WWF), explained that there is an environmental limit to the 'GDP growth dogma', as you cannot have unlimited growth based on the consumption of limited resources. Therefore, WWF advocates the use of an alternative indicator: the ecological footprint. © WWF-Belgium

'The "GDP growth dogma" has been criticised in at least two ways. Firstly, there is an environmental limit. You cannot have unlimited growth of the economy in a world if this growth is related to the consumption of limited resources. Secondly, there is a social dimension as growth of GDP is generally not related to an increase in life satisfaction,' explained Mr De Schutter.

The discussions about and, in some ways, the failure of the GDP growth dogma led to the sustainable development concept, which was officially recognised by the political leaders as the leading principle to drive the world into the 21st century. Today the sustainable development agenda has been recognised by most stakeholders, including economic actors. However, argued Mr De Schutter, the assumed shift to sustainable development has only marginally taken place.

'The effectiveness of the GDP growth dogma relates to the fact that it is deeply rooted in all decision-making processes at all levels. It is an obvious point of reference for decisions and a well-known indicator measuring economic success. Even if it is not explicit it has become business as usual.'

Therefore, many agree, it is necessary to place alternative indicators at the same level of recognition as the GDP. These new indicators also need to become an intrinsic part of decision-making processes. And to be effective and to be able to drive the world, the 'beyond GDP' indicators need to have the same features as GDP.

A communication tool

'GDP is like a thermometer. It is a simple reference number. If it does not rise with at least 2 percentage points, everybody becomes nervous — it is bad news. If it rises with 10 percentage points, like in China, it is just good news. It is a simple and effective signal — and first of all a communication tool,' said Mr De Schutter.

'It is also consistent and to the point. It uses one common unit to add many different elements to each other in a consistent way. A successful "beyond GDP" indicator will have to be as simple, communicable and consistent as the GDP.'

He further argued that a good 'beyond GDP' indicator would not compete with the large panel of very good and detailed social and environmental indicators.

'If you need to look at the reasons behind the growth of GDP, or if you need to decide which actions to take in order to obtain growth, you need more precise information on what is happening in the economy. It is like the degrees of the thermometer, which do not allow you to know if the temperature is rising or falling. It is just a signal. You have to explore further to understand the causes and what eventually influences the results. It would be the same for a "beyond GDP" indicator.'

Ecological footprint: the frontrunner

The ecological footprint is considered by many to be the best candidate to become the environmental 'beyond GDP' indicator. It summarises information in a concise and straightforward way. An advantage is that it directly addresses the



The ecological footprint indicator summarises information in a concise and straightforward way — just like GDP — and it uses a unit which makes sense in environmental terms, while measuring growth. © *Phovoir*

the concept was spread mainly by the WWF. Nevertheless, the concept, the calculation and the methods have been defined in academic contexts, in collaboration with government agencies, and are not directly produced by the NGOs who use the indicator.

question of the GDP growth limit by measuring the consumption of renewable resources.

'Another key feature is that it uses a unit which makes sense in environmental terms. Indeed, measuring environmental effects with economic units will not allow the separation of environmental issues from economic ones. "Beyond GDP" cannot be "aggregated GDP"! The prominence of the economy as a first driver for the industrialised world must be addressed,' said Mr De Schutter.

'It is also important to highlight that the footprint is an environmental indicator, not a social one. It could be used to analyse the inequality in the access of the resources of our planet, but it is not a relevant candidate as a social "beyond GDP" indicator.'

How good is the footprint?

The ecological footprint — just like GDP — is limited by definition. It does not cover environmental issues like toxicity, health, local pollutants, water availability, etc. In fact the footprint indicator covers a clearly defined research question: how much of the regenerative capacity of the planet is occupied by human activities?

'Indicators, which combine information of a different nature, are not effective signals — and therefore not good candidates to become "beyond GDP" indicators. On the other hand, a simple signal cannot cover the whole picture as it becomes too complex to be effective,' observed Mr De Schutter.

A weakness is also that the ecological footprint is considered a non-governmental organisation (NGO) indicator because

'However, the methodology for the calculations still has to be improved, although progress is made every year by the global footprint network, its scientific committees and its partners. One of the main problems with the footprint was previously the disparity of the methods used to calculate the indicator. This has been solved thanks to the standardisation work done by the network.'

To improve the quality of basic data, Mr De Schutter called for the involvement and commitment of national statistical institutes. Switzerland has already joined the global footprint network and similar initiatives are under way in Japan, the United Arab Emirates, Belgium and Finland.

'I think we will see a widespread use of the footprint as soon as more countries and institutions take concrete action to support a "beyond GDP" indicator,' concluded Mr De Schutter.

By Annika Östergren Pofantis, Eurostat Communication Unit

The ecological footprint is a resource management tool that measures how much land and water area a human population requires to produce the resources it consumes and to absorb its wastes under prevailing technology. In 2008, the global footprint network reports that humanity's ecological footprint is over 23 % larger than what the planet can regenerate. In other words, it takes more than one year and two months for the Earth to regenerate what has been used in a single year.

For further information:

<http://www.footprintnetwork.org>

<http://www.wwf.org>

EU watchdog forecasts and surveys the economy with data from Eurostat

The Directorate-General for Economic and Financial Affairs of the European Commission is responsible for fostering the success of the economic and monetary union (EMU). In order to accomplish this ambitious goal, the Economic and Financial Affairs DG monitors closely the development of the EU economy as well as the individual performance of Member States. Economic statistics, especially national accounts data, are an indispensable input to this work. *Sigma* asked the DG's acting Director-General Marco Buti to explain how Eurostat's statistics are used in the work of his DG.



'There is no macroeconomic policymaking without macroeconomic statistics,' said the European Commission's acting Director-General for Economic and Financial Affairs, Marco Buti, to *Sigma*. © European Commission

There is no macroeconomic policymaking without macroeconomic statistics. Statistical indicators are often used to define policy targets and at a later stage to assess the success of economic policy. Our activities involve a lot of policy assessment. Therefore we require abundant data, most of them from national accounts, but we are interested in the full spectrum of macroeconomic statistics,' said Mr Buti.

From national accounts to forecasts

The production of economic forecasts is among the most visible activities of the Economic and Financial Affairs DG, since the forecasts always receive a lot of media attention, and because they are used in many other activities such as economic and budgetary surveillance, policy assessment, promoting appropriate policy action and advancing economic policy coordination.

The DG publishes two rounds of fully-fledged forecasts every year. They cover the 27 Member States, the candidate countries and the world's major economies. The forecast report covers around 60 variables per country. The lion's share is made up of annual national account concepts, but there are also a number of quarterly variables such as GDP and HICP

inflation. Usually the forecasts have a two-year horizon: the autumn 2008 forecasts will extend until 2010. Twice a year interim forecasts are published. These are updates of the previous reports with the latest available statistics and focus on GDP and inflation for the larger EU economies.

'Statistics describe the past with some lag, so actually we need forecasts to get a picture of where we stand right now. Moreover, given the lags in policy decisions, policymakers can't wait for hard data before reacting,' commented Mr Buti.

The Economic and Financial Affairs DG's forecasts are very detailed; they are certainly the most exhaustive macroeconomic forecasts for the EU published by any organisation. Therefore the production has been decentralised to several units, each of them responsible for a limited group of countries. The units apply different forecasting techniques, ranging from economic judgement to more elaborated models, depending on the statistics and other information available in the particular country.

However, in order to ensure consistency, technical assumptions on interest rates, exchange rates or commodity prices are prepared in a centralised manner. Trade consistency exercises are run to ensure that export and import forecasts for individual countries match each other. Moreover, several internal rounds guarantee that the 'forecast stories' for each country are coherent.

'We apply the concepts and definitions of the European system of national accounts. Our forecasts are internally consistent, meaning that total net lending in the different sectors has to add up to zero, that salaries paid by the government and enterprises must equal salaries received by the households and that several other accounting identities are scrupulously respected,' explained Mr Buti.

The forecasts are prepared on the basis of unchanged policies, which means that only policy measures that already



For the Stability and Growth Pact, the Economic and Financial Affairs DG focuses on government accounts. However, surveillance has widened and Mr Buti and his colleagues now do a complete assessment of economies, including competitiveness issues. Pictured are Joaquín Almunia, Commissioner for Economic and Monetary Affairs, and Christine Lagarde, French Minister for the Economy, Industry and Employment, at the ceremony of the euro coin clock which marked the 2009 entrance of Slovakia to the euro area.

© European Council

have been approved are considered. If a government simply commits to reduce its deficit without any further elaboration, it is not considered. The reason is that the Economic and Financial Affairs DG wants the forecasts to reveal potential problems and lead policymakers to act.

'Assume that our projections were not prepared on the basis of unchanged policies. We could then anticipate and include in our forecasts the measures we found appropriate to solve a specific problem. Our forecasts could apparently be closer to reality, but they would to a lesser extent reveal the size of the measures needed,' said Mr Buti.

Macroeconomic surveillance

Eurostat data are also used in budgetary surveillance, according to the Stability and Growth Pact. The Economic and Financial Affairs DG assesses the multi-year fiscal plans that Member States present in their stability and convergence programmes. The euro area Member States present stability programmes and the countries that have not yet adopted the euro prepare convergence programmes. When data indicate an excessive deficit, notably when the annual government deficit exceeds 3 % of GDP, the DG puts in motion the so-called excessive deficit procedure.

'In the context of the Stability and Growth Pact, our interest is mainly government accounts, in particular the government deficit and debt. However, our surveillance has been progressively widened and we are now performing a complete assessment of the economies, including notably competitiveness issues. This is possible thanks to the wide range of data available from Eurostat and national statistical institutes,' observed Mr Buti.

Last but not least, Eurostat data are used in the preparation of the convergence reports, which are adopted by the European Commission and which identify the countries ready to join the euro area.

And what about the future?

The Economic and Financial Affairs DG is a major user of macroeconomic statistics and plays an important part in the European policymaking process. Therefore it is in a good position to forecast not only economic developments but also the future demand for statistics.

'Good statistics are a key ingredient for good policymaking and this will not change. Over the last 10 years, there has been a major progress in European macroeconomic statis-



The Economic and Financial Affairs DG has identified three mega-trends that will shape the economies in the coming decades: globalisation, an ageing population, and scarcity of natural resources. © Phovoir

tics with higher frequency of data, shorter publication lags for most variables and a better coordination among countries. I think this trend will continue,' said Mr Buti.

In a recent report, on the 10th anniversary of the economic and monetary union, *EMU@10*, the Economic and Financial Affairs DG identified three mega-trends that will shape the economies in the coming decades, raise policy challenges and also influence statistics: globalisation, an ageing population, and scarcity of natural resources.

'Due to globalisation, policymakers are increasingly interested in their partners' economies and need to react faster to economic developments. An ageing population increases the importance of statistics on social protection, for example on healthcare and old-age pensions. In this area my staff has been cooperating with Eurostat and I hope we will have the data soon. There will also be an increasing demand

for statistics on natural resources and on human capital, for example on migration, and on the quality of public finance,' explained Mr Buti.

According to Mr Buti, the speedy changes of economies with the development of new industries had resulted in a lack of data on some new sectors. Statistics on the services sector were still relatively scarce and needed to be brought to the level of manufacturing statistics.

'I think that the financial turmoil initiated in summer 2007 showed that our knowledge of the financial exposure of economic agents is not enough. Statisticians had been at pains to follow financial innovation and I think they should invest their expertise in that area,' he concluded.

By Johan Wullt, Eurostat Communication Unit

For further information:

Website of the Economic and Financial Affairs DG: http://ec.europa.eu/dgs/economy_finance

Forecasting future economic challenges



Dr Andreas Scheuerle and Peter Leonhardt prepare prognoses and analyses for DekaBank, the asset manager of the German Savings Bank Finance Group — the Sparkassen-Finanzgruppe. Within DekaBank, Dr Scheuerle heads the European Economics Unit of the Macro Research Division, while Mr Leonhardt holds an advisory position. In this interview they explain to *Sigma* readers how their work revolves around continuous usage of the national accounts data.

Dr Andreas Scheuerle heads the European Economics Unit of the Macro Research Division at DekaBank. © DekaBank

The Macro Research Division of DekaBank employs 19 people, grouped according to their specialities and regions of expertise. Dr Scheuerle, an expert on the euro area and its Member States, is charged with the production of forecasts related to the economy of the euro area.

'Preparing macroeconomic reports on financial trends and fluctuations, I work with the national accounts data on a daily basis,' said Dr Scheuerle. 'Our division needs all sorts of data relating to business activity, sectors of economy, raw materials and housing markets.'

The Macro Research Division produces a number of different types of analyses.

'The forecast from the short-term indicators is produced weekly and accompanied by a trend analysis,' explained Mr Leonhardt. 'Then there are the mid-term economic trend forecasts, updated every month, for periods of up to two years. Every December we also present a full outlook for the following two years.'

The DekaBank researchers also prepare long-term analyses, reflecting, for instance, their evaluation of the health and development of the financial or mortgage markets.

'For our assessments, we utilise data from a variety of sources,' said Dr Scheuerle. 'The Eurostat database, which allows us to follow developments both in particular euro area Member States and the euro zone as a whole, is invaluable. So is the EcoWin online economic and financial database, consisting of data from more than 100 countries worldwide.'

'Other main sources of information include the national central banks and other European Commission departments' sources,' added Mr Leonhardt.

Among the recipients of the DekaBank forecasts, which are published in the form of press releases, are government ministries and institutions, banks forming part of the Sparkassen-Finanzgruppe and private investors and analysts interested in the economic and financial market developments.

The topics of the macroeconomic forecasts vary, partly depending on client interest. 'Apart from regular analyses, such as the weekly or monthly indices, we do research on themes that seem topical to us at a given period of time. For instance, this year we looked at wage comparisons across Europe and at Germany's role in the process of globalisation,' said Dr Scheuerle.

'Frequently, we get in-house requests and inquiries from banks forming the Sparkassen-Finanzgruppe. For example, it is not unusual for a Sparkasse bank in a different part of the country to ask us for an analysis of current housing market trends in the USA.'



Peter Leonhardt is an advisor in the European Economics Unit at DekaBank. © DekaBank

Reliability most important

Asked about the relationship between timeliness of the national accounts data and their quality in his line of work, Dr Scheuerle said that the issue of timeliness played a less pronounced role than that of total data reliability.

'If I were to choose, I would say that for us the timeliness of the data is less important than their reliability,' said Dr Scheuerle. 'The reason for this is that most of our clients do not closely follow the revisions of the data. This is why we have to be exact from the start. The market participants who take immediate decisions have no time to read later corrections.'

And what would be the ideal wish list in relation to the national accounts data that the DekaBank analysts receive from their suppliers, among them Eurostat?

'As every researcher will tell you, we could do with more reliable, detailed data from even more areas,' commented Dr Scheuerle. 'However, to stay within the realm of the possible, we would very much like to have more information regarding activity in the service sector.'

'As you might know, the service sector represents about 70 % of the economy,' said Mr Leonhardt. 'Therefore it is difficult to overestimate the importance of the service sector data, which provide crucial evidence of a slowing or revival of an economy.'

Dr Scheuerle added that in Germany the service sector statistics were still at a relatively early stage of development. 'We only receive annual data, which, at best, describe the state of things. However, they do not provide us with enough information on a monthly basis to be able to prepare any fore-

casts. Whole sets of data relating to the production side, for instance, are completely missing. We do not have any statistics on incomes of particular wage groups, employment and orders.'

Mr Leonhardt added that often important information was missing from the service sector statistics because it was not obligatory for firms to provide it. 'The majority of data regarding smaller companies, for instance, is not available, because they are not obliged to provide data to the federal statistical office.'

More extra-EU comparisons needed

Regarding the quarterly national accounts data for Europe, the DekaBank analysts would welcome more harmonised data referring to a longer time series. At the moment, on a European level, these data go back to 1995 and no further.

'We would like to be able, for instance, to better analyse how economies behave in times of an economic downturn,' said Dr Scheuerle. 'However, we have no data showing the effects of the oil crises of the mid-1970s and early 1980s. These data often exist at a national level, but at present no efforts are being made to aggregate them and make them available for research.'

Referring specifically to data regularly released by Eurostat, Mr Leonhardt said that it would be very helpful for his division if more data were made available about Japan, the USA or Australia. 'As far as national accounts are concerned, we could do with many more extra-European comparisons. This would lead to the creation of a solid data bank, helpful in our present and future work.'

Both Dr Scheuerle and Mr Leonhardt praised Eurostat's leading role in the way that national accounts statistics were presented and disseminated. 'We see Eurostat as a real pioneer as far as data visualisation and accessibility are concerned. Also, Eurostat's figures are ever more timely and complete,' said Dr Scheuerle. 'I can still remember the time when it was not possible to download data from the Eurostat website to make your own charts and the only way to get detailed figures was to go to the data shop and buy the statistics there.'

'The work done by Eurostat in the area of data comparability is excellent,' agreed Mr Leonhardt. 'For us, the inflation rate is a prime example of what the harmonised indicators for Europe should look like.'

Concluding our interview, Dr Scheuerle said that, in his view, the recipients and analysts of statistics, such as himself and

his colleagues at DekaBank, suffered most when political decisions were taking precedence over statistical needs. 'When politicians say that statistics should be produced in a more "efficient" way, they usually mean that less money should be spent on their production,' said Dr Scheuerle.

'For us, in practice, this means less available data, because, invariably, fewer statistics are produced as a result of such postulates. The problem is that, trying to save money, one often leaves important parts of the data production process out. And, in the end, it is the politicians who are affected by the resulting lack of statistical information as much as all other data users,' concluded Dr Scheuerle.

By Lukasz Augustyniak, Eurostat Communication Unit



The DekaBank analysts would like to have more information about the service sector, which represents 70 % of the economy. 'Therefore it is difficult to overestimate the importance of the service sector data, which provide crucial evidence of a slowing or revival of an economy,' said Mr Leonhardt. © Bernd Sterzl/PIXELIO (www.pixelio.de)

British economist requests more information on data reliability

Professor Martin Weale is Director of the National Institute of Economic and Social Research, Britain's longest established independent economic research institute. Being an experienced economist and a frequent user of statistics, *Sigma* asked him about his use of national accounts data in economic forecasting.



Professor Martin Weale uses many different data sources, including national accounts statistics from Eurostat, to project people's behaviour and thus the evolution of each economy.
© Martin Weale

Eurostat provides this sort of information on their GDP news release and I think it's a good example that other institutes could follow. It is important that the information is as visible as the data themselves and not relegated to a note at the end of a press release.

Mr Weale, how do you make use of national accounts data in your work?

At the institute we make forecasts for the major economies in the world. We use national accounts data from several statistical institutes in Europe, North America and the Far East. We continuously update our databases with any new macro-economic data. Most of them are national accounts but we also use other data such as retail prices and interest rates. These data are used to produce equations representing the behaviour of people in the economies in question. The equations in turn are used to project people's behaviour, and thus the evolution of each economy forward.

As an experienced user of national accounts data, what feedback would you like to give to the data providers, the statistical offices?

For me as well as for other professional users of these sorts of data, it is very important to know how reliable the data are. This means you need to know how often the data are revised and the average size of the revision. I have noticed that

Why is a quality declaration important to you? How does it affect your work?

When making use of any data it is important to have a sense of how reliable they are. All sorts of judgements depend on data and the conclusions that you come to depend on how accurate those data are thought to be.

When it comes to the national accounts which improvements would you like to see?

I believe that balance sheet data need to be reinforced. I think it would be very useful if we could have more information about the assets held by individuals and companies. For example, France and the United Kingdom provide information on the value of real estate but, as far as I can tell, Italy and Spain do not. With these data more widely available I could then estimate the impact any decrease in real estate prices would have on household wealth and thus identify possible impacts on consumption.

Do you have any suggestions on how to improve the calculation of GDP?

There are likely to be a number of revisions in the new system of national accounts. Some of them, such as proposals



Professor Weale believes that balance sheet data need to be reinforced. If he had comparable data on the value of real estate, he could estimate the impact a change in real estate prices would have on household wealth and thus possible impacts on consumption.

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to treat intangible assets as capital goods, are very interesting. But at the same time the creation of a new set of assets with what are likely to be very high depreciation rates raises the importance of looking at the net domestic product as well as the gross domestic product.

GDP is a widely used economic indicator. Is it the best indicator or should it be replaced by other indicators

depending on the actual context?

GDP had its origins in 1940 as a tool of war-time planning in the United Kingdom. For most people real income is a more intuitive concept. Politicians like talking about GDP growth partly because they think that being technical makes them sound expert. But living standards are actually influenced by real income, i.e. after allowing for depreciation and the effects of changes in terms of trade. It is perfectly straightforward to produce such numbers and I would like to see the emphasis switched to them.

By Johan Wullt, Eurostat Communication Unit

Challenges of implementing the 2008 system of national accounts worldwide



In spring 2008, an updated version of the system of national accounts (SNA) was adopted by the United Nations Statistics Division (UNSD). The implementation of these internationally agreed standards for measuring economic performance lies ahead. Paul Cheung, Director of the UNSD, described the update of SNA 2008 and its implementation process for *Sigma*.

Paul Cheung is Director of the United Nations Statistics Division.
© UNSD

The system of national accounts 2008 is the internationally accepted framework for compiling macroeconomic aggregates, such as GDP. Due to the effects of globalisation on the economy and advances in methodological research, the United Nations Statistical Commission called for an update of the 1993 version of the SNA in 2003. In spring 2008 the first volume of the revised SNA was adopted and recommended for use in national accounts data collection, dissemination and analysis worldwide.

'The first volume is the "heart" of the SNA. It contains the core accounts, the main concepts, definitions, and the actual accounting rules,' said Mr Cheung.

The adoption of the second volume, which covers the interpretation of the accounts and various extensions, such as satellite accounts, is foreseen for spring 2009.

Broad consultation process

The work on the update has been coordinated by the Intersecretariat Working Group on National Accounts (ISWGNA),

which comprises representatives from the European Commission (Eurostat), the International Monetary Fund, the OECD, the United Nations and the World Bank. This group has been assisted by experts from 20 countries from all over the world, which met in a series of 'issue-oriented' meetings and held electronic discussions to provide technical advice and to make recommendations. All in all, 44 substantial issues, such as the treatment of pension schemes, financial assets, research and development, and military expenditure were discussed.

'The update process set a fine example for international cooperation and transparency in updating international statistical standards. Never before were all stakeholders so widely and effectively consulted,' observed Mr Cheung.

This, by a large measure, was made possible by the web-based technology introduced by the ISWGNA to communicate with stakeholders throughout the process. The website provided comprehensive and timely information related to the update, including the work programme, the list of update issues, an archive of related papers, the recommendations of the Advisory Expert Group and the draft chapters of SNA 2008.

Philosophical differences

The update process needed to reconcile very diverse views, approaches and practices of national accounts compilation used worldwide.

'The alleged fundamental rift between countries has philosophical and historical origins and is about how the statistical systems are meeting the demand of the users. Some countries, such as Australia, Canada and the United States, favour growth and productivity analysis with full pricing of produced capital while the European countries are more prudent due to their regulatory statistical framework. There-

fore, for example, the European countries prefer using actual statistical data,' said Mr Cheung.

Another discord has been what to include in the core accounts and what to include in the satellite or supplementary accounts.

'This is a boundary issue. Some countries wanted to put more of the SNA recommendations in the first volume, which comprises the core accounts and should be produced on a regular basis. Still the end product that we achieved is conceptually and operationally solid. A compromise was reached with a manageable split between the two volumes,' explained Mr Cheung.

Joint efforts for a common goal

Mr Cheung expects the first country to implement the new SNA to be Australia. Thereafter may come the United States and Canada. The countries in the European Union are scheduled to follow a few years later. The main reason for this is that the revisions in SNA 2008 will be integrated into the re-

vised European system of accounts, which should become EU law around 2011 (see article on p. 13).

Implementing the SNA will present a special challenge for developing countries, many of whom do not have adequate basic data. Statistical offices are often understaffed, hence few people work with national accounts and related economic statistics. The staff turnover is also high, mainly because of low pay. This is a particular problem when you try to build capacity in national accounts where staff with years of experience are needed. Today only 60 % of developing countries use SNA 1993.

'It is important that countries have good basic economic statistics and that they build up the capacity and experience to integrate these basic statistics into good national accounts. Also good governance is a pre-requisite for this process. Unfortunately, there are many places where this is not the case,' remarked Mr Cheung.

There is significant and growing demand for data obtained through national accounts. GDP, the share of income by indus-



The 'Luxembourg recommendations' are designed to improve the coordination and efficiency of the production of national accounts data in developing countries. Moreover, they set strategic deliverables for the coming decade for achieving better compliance in more countries with SNA 2008. The recommendations were adopted at a Eurostat-UNSD conference in May 2008. © EC C. Ardillac

try, household expenditures, investments and international trade are some of the important indicators that are needed for policy planning and evaluation, and are requested by investors, businesses and international organisations.

'The advantage of using the SNA as compilation and integration framework is that you have better chances to "guarantee" good quality and comparable economic data. You know when you get to a table how the entries were compiled and you can check the data for consistency.'

'The road to full implementation of the new SNA 2008 will be longer for some countries than for others. However, national accounts have to reflect new economic phenomena in a global economy and the job is to bring everyone up to speed. I would say that the implementation of SNA 2008 is a bit like a caterpillar. Before the back can move, the front has to go. If the front doesn't shift, there is no progress at all. Therefore we look at some countries to be frontrunners from which other countries can learn.'

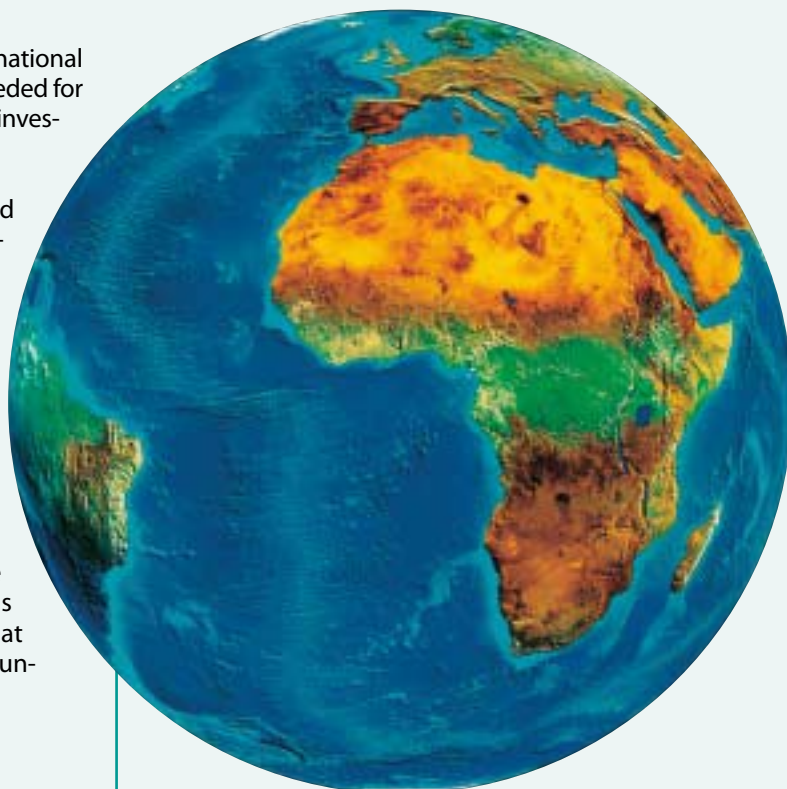
Statistical capacity building

The UNSD supports developing countries to strengthen statistical capacity in national accounts and related statistics in various ways, including organising workshops both at regional and country levels. One example was the seminar in Ethiopia last May, on how to collect retail trade data and how to compile indices. In addition to offering training to statisticians, the UNSD also conducts country missions, and helps establish stakeholder consultations.

The UNSD will take the lead and actively participate in publishing a series of manuals and handbooks, and in different advocacy activities to help national statistical offices generate technical capacity in national accounts.

The Luxembourg recommendations

The UNSD's role in technical assistance and capacity building in the national accounts field is undertaken in close collaboration with the ISWGNA member organisations. One example was the Eurostat-UNSD conference, 'International outreach and coordination in national accounts for sustainable growth and development', held in May 2008. The main output of the conference was the 'Luxembourg recommendations', which are designed to improve the coordination and efficiency of the production of national accounts data in developing countries. Moreover, they set strategic deliverables for the coming decade for achieving better compliance in more countries with SNA 2008.



Implementing the SNA will present a special challenge for developing countries, many of which do not have adequate basic data. 'The road to full implementation of the new SNA 2008 will be longer for some countries than for others. However, national accounts have to reflect new economic phenomena in a global economy and the job is to bring everyone up to speed,' said Mr Cheung. © ESA

'I am confident that these principles and recommendations will be transformed into global and accompanying regional implementation work programmes to be presented to the Statistical Commission in 2009,' said Mr Cheung.

Next update?

The timing and extent of future revisions will depend on many factors, including new economic phenomena which are not currently covered or may be due to presently unforeseen major economic crises. To deal with the future direction of the SNA, a high-level group has been set up by the ISWGNA. It will be in charge of the development of the SNA and possible further changes. However, Mr Cheung believes that all major elements are in place to promote the transition to SNA 2008.

'We have good national accounts now for the next decade,' he concluded.

By Annika Östergren Pofantis, Eurostat Communication Unit

For further information:
<http://unstats.un.org>

OECD — Unveiling the full potential of national accounts



'National accounts are closely associated with GDP. However, this is just one of the multiple variables produced by national accounts. An increasingly important aspect is to measure welfare and it is important to fully exploit the richness of the national accounts data available. National accounts also play a key role in setting standards for other statistical activities such as surveys and registers,' says Enrico Giovannini, Director of Statistics and Chief Statistician at the OECD, in an interview with *Sigma*.

As explained by Enrico Giovannini, Director of Statistics and Chief Statistician of OECD, 'National accounts play a fundamental role in setting standards, definitions and concepts used by other statistical activities such as surveys, registers and classifications. From this point of view, Europe has been successful in showing the links between national accounts and statistical tools and in fostering integration of these various domains.' © OECD

What is the role of the OECD in national accounts?

The OECD is one of the main players in the national accounts arena. Together with the World Bank, the International Monetary Fund, the United Nations and Eurostat, it is part of the Intersecretariat Working Group on National Accounts, the body that supports the international agenda for the development and implementation of the system of national accounts (SNA).

On top of this, we have a very active Working Group on National Accounts which represents a bridge between the OECD European and non-European countries such as Japan, Australia and the United States. Finally, in 2003, we have enlarged our working group to Brazil, India, Russia and China, the largest non-OECD countries. So the working group has become a key forum for the discussion of national accounts related issues with these important emerging markets.

From the OECD's point of view, what are the future challenges in this field?

First we have to complete the second volume of SNA 2008. This work will be finished in the beginning of 2009 (see also article on p. 49). Then, the most important challenge will be its implementation. This will take years and we have to recognise that the timing will vary across the world. In some countries, such as Australia and the United States, implementation will start right after the update of the SNA. In Europe, it will not start before 2014.

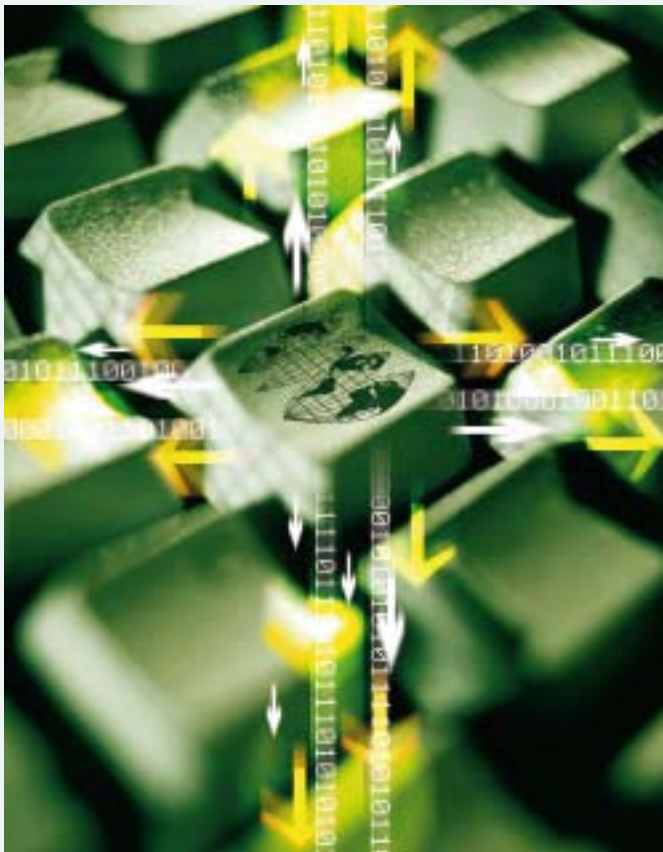
Therefore, for some years, the developed countries will follow different systems. The OECD, as an international organisation, will produce estimates to ensure the availability of comparable data.

What are your views concerning the dissemination of national accounts, both for data and methodology?

It is difficult to include national accounts in a single dissemination framework due to the richness of the data available. The data disseminated in the most popular publications and databases are just a subset of what is compiled. This means that we have to create more opportunities and tools to show users the multiple uses of national accounts for different purposes. We produce figures for a lot of sectors, like households or the public sector. Unfortunately for many people national accounts mean just GDP.

How do national accounts and globalisation fit together? Is the concept of national accounts still valid or would it be more appropriate to talk about international accounts?

The success of national accounts lies in their use for political decisions, many of which are still taken at national level.



On the other hand, some figures are less reliable due to globalisation. In this case, it is important to calculate and consolidate accounts at supranational level, as Eurostat and the European Central Bank are doing. Of course, this is much more difficult to do when you do not have the power to impose statistical standards on member countries.

Are national accounts the right instrument to measure economy movements in emerging economies such as Russia and China?

The statistical experience of Europe demonstrates how complicated it is to produce fully comparable figures across countries. We cannot take for granted that data from Russia or China, for example, are fully comparable internationally. The reconciliation of data into a coherent internationally comparable set is a complicated process and requires a lot of resources.

On the other hand, we have other types of data, such as surveys or the balance of payments, which, of course, are strongly affected by globalisation. National accounts are still rele-

'Given the richness of national accounts data available, it is important to show users the multiple uses of data, which go beyond measuring GDP,' said Mr Giovannini. © OECD

vant but they are not the only tool. My recommendation is to use the different tools we have developed over time, and in the meantime work on the quality of data in these emerging markets. The OECD is very much involved in this aspect. Since 1998, we have, for example, a workshop with the Chinese Statistical Office every year on the development of national accounts, which has proven to be extremely useful.

Given globalisation, are national accounts quick enough to measure these phenomena?

I'm quite critical about the reluctance of national accountants to change the rules of the SNA. I find them quite conservative due to worries that revisions may lead to changes in the figures and criticism from politicians and users. Let's imagine for example the impact of these changes on the EU budget-related payments. Of course, there are also budget constraints that limit the capacity of launching new surveys.

Another example concerns the ongoing discussions about the inclusion of research and development expenditure as part of investment. Users from the academic world support this option while some national statistical offices are worried about introducing estimates which are based on intangibles. We have to accept a certain degree of 'model-based' estimates, otherwise we reduce the capacity to measure what's really happening in the economy. By the way, this is what we are already doing for other parts of the accounts, like for the non-market activities.

By Beatriz Fernández Nebreda, Eurostat Communication Unit

OECD

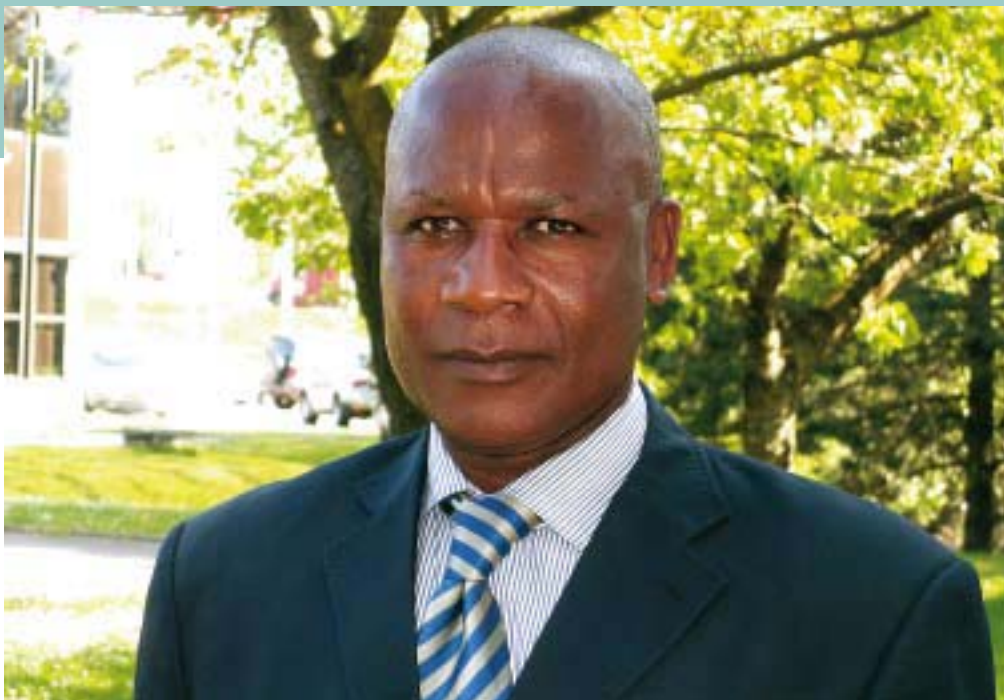
The Organisation for Economic Cooperation and Development was established in 1961. It has 30 member countries, most of them from Europe (both members and non-members of the EU), as well as Australia, Japan and the United States.

The OECD provides a setting where governments compare policy experiences, seek answers to common problems, identify good practice and coordinate domestic and international policies. The OECD also shares expertise and exchanges views with more than 100 other countries and economies, from Brazil, China, and Russia to the least developed countries in Africa.

For further information:
<http://www.oecd.org/statsportal/>

A journey with no end — The production of national accounts in Cameroon

Cameroon is one of the few countries in Africa that 15 years ago embarked on the road towards creating a modern system of national accounts. *Sigma* met Mr Nepetsoun from the Cameroonian National Institute of Statistics to find out what problems had to be overcome in the process.



Mr Nepetsoun is a national accounts expert from the Cameroonian National Institute of Statistics.
© ECA. Östergren Pofantis

We began by going back to the year 1993 when two French experts arrived in Cameroon charged with the task of helping the country establish a system of national accounts. 'Michel Seruzier and Bernard Bourriquen supported this project through regular visits,' said Mr Nepetsoun. 'They initiated and monitored the implementation of the early stages of the Eretes programme in Cameroon — showed us how to store economic data, how to organise the accounts and how to work on data comparability. We are very indebted to them!' Eretes is a tool jointly created by the French statistical office (INSEE) and Eurostat to be used in the development of the national accounts according to the 1993 SNA.

Assessing the scale of the informal economy

However, even the best tool cannot solve all the structural problems, some of which still persist. Mr Nepetsoun

explained that important progress has been achieved in estimating the informal economy, neither taxed nor monitored by the Cameroonian government. 'We assess that the informal economy, excluding the agricultural sector, accounts for up to 20 % of the total gross domestic product of the country,' he said. 'If you include agricultural production, this figure rises to over 50 %. Considering these dimensions, you must understand why it is of crucial importance for our statisticians working on the system of national accounts to be able to at least try and keep track of the figures.'

able to at least try and keep track of the figures.'

This is being done by means of conducting two types of sample polls: the household and the employment surveys. 'We start by identifying a number of households, in which we then proceed to conduct the initial survey,' explained Mr Nepetsoun. 'As a result we not only know how many people live in each household but also, more importantly in this case, how many of them are employed and what exactly they are doing.'

The employment survey constitutes the second stage of the work done by the Cameroonian statistical team. Here, the questions revolve around the exact descriptions of the activity performed by the individual, and so roughly reflect the scale of the informal economy in a given area.

'In order to achieve a good reliability of the data we should do these surveys regularly, which is not the case. The last ones were conducted in 2005,' Mr Nepetsoun pointed out.

Data problems

To start with, we learn that Cameroonian statisticians still work with the figures of the population census held over 30 years ago in 1987. Results of the 2005 population census are still not available. 'As you can see, the data we are using do not reflect correctly the real state of the Cameroonian society,' said Mr Nepetsoun.

'Another example is the enterprise census. The last one was held in 1983. The demography of our companies was totally different back then and, understandably, it has completely changed since. Many businesses have closed down in the last 25 years, others have popped up. Some companies have become much bigger than others.'

The Cameroonian national accounts producers are also aware of the state of the agricultural data in their country. Here the sources and methods of data collection are often based on estimations. 'But these specific observation methods, which have been used for decades, today, more than ever, show their limitations,' observed Mr Nepetsoun.

Asked about how many people were charged with the production of national accounts in his country, Mr Nepetsoun stressed problems linked to human resources, common to all African countries. 'Our team has 24 people, including technical personnel. Unfortunately, they are not sufficiently motivated,' he said. 'We have a very high staff turnover. This constant change of personnel leaving for better paid jobs in the private sector, but also for other governmental positions, can be quite demotivating and disruptive — after all, the production of national accounts is a long-term process. It also means that we are constantly training new people, who often decide to leave us just when they are about ready to work and start gathering valuable experience.'

Working conditions could also be improved. Reduced office space and lack of adequate equipment — members of the national accounts team have to share one computer between two people — mean that the work takes longer than it should. 'But I do realise that we are not the only statistical office in Africa which could do better with more money,' he admitted.

Improvements on their way

However, according to our interlocutor, the picture is not all bleak and major changes are on their way. Cameroon is working towards establishing a new 'point of reference' in the production of the system of modern national accounts. For a variety of reasons, the experts have chosen the year 2005 to serve this purpose. 'As I mentioned earlier, that was the year when a new population census was held, the results of which should be published later this year.'

'Both the household and the employment surveys were also conducted in 2005 and later in the year we will know their results,' said Mr Nepetsoun. The year 2008 will see the realisation of a new census of enterprises, which will cover main sectors of the economy with the exception of the agricultural sector. 'These data will be made available to us by the Ministry of Agriculture in the near future.'

Thus the picture of the Cameroonian economy should soon be fuller and much more up to date than at the moment.

Mr Nepetsoun estimates that the informal economy, excluding the agricultural sector, accounts for up to 20 % of total production in the country. 'If you include agricultural production, this figure rises to over 50 %. Considering these dimensions, you must understand why it is of crucial importance for our statisticians working on the system of national accounts to be able to keep track of the figures,' he said. Pictured is a sewing workshop in Cameroon. © EC F. Lefèbvre





'We have the full support of the Director-General of our institute, who has approved a new organisational structure aimed at improving work efficiency,' said Mr Nepetsoun. 'We are also intending to raise salaries, which should seriously reduce the costs of recruitment and training of new staff. The management also wants to address the issue of working conditions and stress levels.'

ise that the work on a complete system of national accounts is a journey without a set end, the least we can do is to attempt to create comparable sets of data through unifying their gathering methodologies across the continent.'

The national accounts team in Cameroon is facing many challenges. However, the picture is not all bleak and major changes are on their way. The picture of the country's economy should soon be fuller and more up to date. © EC F. Lefèbvre

African future

'In an African context our work has already found wide acknowledgement,' said Mr Nepetsoun. 'We have frequent guest visits from statisticians and other experts willing to learn from our experiences in the production of national accounts. They come from Nigeria, Chad, the Democratic Republic of Congo and Burkina Faso.'

Although France is Cameroon's number one partner, the country also closely cooperates with the IMF Africa Regional Technical Assistance Center (AFRI-TAC) and, like other African statistical institutes, increasingly benefits from its know-how.

'In the future, we will need ever more inter-African cooperation in the field of statistics and production of national accounts,' concluded Mr Nepetsoun. 'While I real-

Brazil — Measuring a growing economy



Eduardo Pereira Nunes is President of the Instituto Brasileiro de Geografia e Estatística (IBGE).
© ECC. Ardillac

Brazil is the world's fifth most populous country and the 10th-largest economy in GDP terms. The production of national accounts plays an important role, providing an overall view of the growing economy. The current system of national accounts was developed in 2000, following a complete overhaul in the collection of Brazilian statistics in the 1990s, as Eduardo Pereira Nunes, President of the Instituto Brasileiro de Geografia e Estatística (IBGE) explains.

The IBGE decided to change the statistical collection system from a business census-based system to a new one based on annual surveys. Until 1985, when the last census took place, the censuses had been carried out every five years. The evolu-

tion of the economy in the in-between years was estimated on the basis of price and volume indicators.

'We had to adapt the statistics from all sectors — whether industry, trade, construction or services — to the new system of annual surveys. We started off with the basic statistics and gradually added a new field every year. The first annual survey took place in 1995. By 2000, the new annual-based survey system was fully implemented, covering all statistical fields,' said Mr Nunes.

By then, Brazil was ready to move the Brazilian national accounts base year to 2000.

Surveys are based on the business register

In order to adapt to the new system, the first thing the IBGE did was to carry out a business register. This census serves as a basis for the sample used in the annual surveys. It is updated every year and today includes some 4.7 million enterprises. However, this census only includes registered enterprises. The non-registered ones, most of which are in the agriculture, services and construction sectors, are not part of this census. The number of people working in non-registered companies, Brazil's informal economy, is estimated at 10 million.

The measurement of this part of the Brazilian informal economy is made by the IBGE through the use of data from the household surveys, also conducted every year, which cover the whole population on a sample basis.

The sample for the annual business surveys changes every year. Mr Nunes explained: 'The sample represents some 300 000 enterprises, less than 10 % of the total registered ones. Enterprises are chosen based on the number of employees. All of the industrial companies with more than 100 people are included, and 1 in 10 out of the small companies, those with less than 100 employees.'

New national accounts reference 2000

The new system of annual surveys was fully implemented in 2000. Given that data for all statistical sectors were then available, this year represented the ideal reference year on which to base the updated system of national accounts. In 2007, the IBGE started publishing the new series of the system of national accounts with reference to the year 2000. Today, this new series presents annual and quarterly national accounts at current and constant prices from 2000 to 2007. The IBGE also publishes annual GDP for Brazil's 27 states and over 5 564 municipalities based on estimates from the annual data.

Brazils' system of national accounts is elaborated in accordance with SNA 1993, and now the IBGE is starting the adoption of the recommendations of SNA 2008.

Conciliation of quarterly and annual data

'An important feature of our national accounts system is the preparation of input-output tables for both annual and quarterly data. The tables allow you to check the coherence of existing data on income, production and expenditure, the three views of national accounts when measuring the GDP. It is a good quality check, as data come from various sources, such as: ministries; services, industry or agriculture; household or business surveys. The advantage of this approach is that, at the end of the year, there's little deviation between the annual data and the quarterly data previously published,' Mr Nunes pointed out.



Today the IBGE publishes annual and quarterly national accounts, as well as data on Brazil's 27 states and over 5 500 municipalities based on estimates from the annual data. Pictured are the Iguazu Falls in Brazil. © A. Franco

This gives the IBGE great credibility among its users: the public sector, private consultants, investors, banks and the Central Bank, the media and the general public.

Environmental and satellite accounts on the agenda

Today, one of the main challenges of the IBGE is to complete the system of national accounts with the development of a set of financial accounts.

'We have been working on this issue with the OECD since 2003, even if Brazil is not a member of the organisation. It helps us understand the challenges and draw on the experience from developing economies,' Mr Nunes remarked.

Another area the IBGE plans to work on are environmental accounts, an important issue in Brazil. The reason why the IBGE has not yet developed this type of accounts is due to the complexity of measurement. The IBGE has decided to choose one natural resource at a time, such as water or forests, and to develop a statistical method to estimate it. The estimation will be only for quantity — such as how much water there is in the underground reservoirs; or what the size of the Amazon forest is; or how many vegetal species the Amazon forest has. The value aspect is even more difficult to estimate. The aim is to cooperate with other countries and the United Nations Statistics Division in this field.

The development of satellite accounts also poses a significant challenge. Satellite accounts include fields such as health, education, tourism and culture, each having a particular statistical system.

'I think today, thanks to the cooperation with France and Canada, two countries which have shared with us their know-

how and experience in national accounts, and to the current cooperation with the OECD, Brazil has a high-quality system of national accounts. However, the system is far from complete. We still have much to learn but, at the same time, have a lot to offer to less developed countries in term of statistics. I look forward to an increased cooperation with partners in this field', concluded Mr Nunes.

By Beatriz Fernández Nebreda, Eurostat Communication Unit

The IBGE

The Instituto Brasileiro de Geografia e Estatística (IBGE) groups under the same roof statistics and geography. Its workforce is around 10 000 people, 2 000 of which are temporary staff who carry out the survey interviews.

The IBGE is responsible for producing all statistics in Brazil, from prices, employment, agriculture, industry, construction, trade and services, and population statistics to national accounts. It also elaborates topographic charts and maps, and produces data on natural resources and on the sustainable development indicators.

Eduardo Pereira Nunes

The President of the Brazilian Institute of Geography and Statistics (IBGE) has devoted his professional career to the institute. He joined the IBGE in 1980 and from 2000 until 2003 he was Head of the National Accounts Department. He was appointed President in February 2003.

Mr Nunes holds a PhD in Economics and is Professor of Economics at the PUC University of Rio de Janeiro. He was President of the Bureau of the Conference of American Statisticians of the UN Economic Commission for Latin America and the Caribbean (2003–04). He is currently a member of the Bureau of the Conference of European Statisticians and President of the Committee of Statistics of the World Tourism Organisation until 2010.

For further information:
<http://www.ibge.gov.br/english/>

Putting the user first — *Sigma* meets the President of the Bulgarian National Statistical Institute



In Sofia, *Sigma* met Mariana Kotzeva, the new President of the Bulgarian National Statistical Institute. She talked to us about the evolution of the Bulgarian statistical system as well as her ambition to make statistics more understandable to a broader public.

The President of the Bulgarian National Statistical Institute, Mariana Kotzeva, aims to further improve the understanding of statistical concepts among members of the media and broader public. © Bulgarian National Statistical Institute

Before joining the Bulgarian NSI in May 2007, Ms Kotzeva spent a large part of her professional life teaching statistics and econometrics at the University of National and World Economy in Sofia and the Central European University in Budapest. Parallel to a university career, she was also a consultant to various Bulgarian governmental institutions, such as the Administration of the President, the Council of Ministers and the Ministry of Labour and Social Policy.

'I was delighted when I joined the institute last year,' said Ms Kotzeva. 'The Bulgarian statistical system had just gone through a long period of restructuring and modernisation. The independence of our NSI and the positive implementation of the European statistics code of practice were confirmed by a peer review conducted in April 2007 by a team of international evaluators.'

In her capacity as Secretary-General of the institute, Ms Kotzeva was made responsible for handling the area of Euro-

pean affairs. 'I managed EU grants in the field of statistics and worked on the development of bilateral relations and projects with other European NSIs,' she said. 'In addition, I was in charge of general management and financial affairs within the institute, which proved to be a very useful exercise before becoming the head of the institute this year.'

Challenges ahead

Referring to the situation at the Bulgarian Institute today, Ms Kotzeva admitted that, despite some major changes carried out in the past decade, many challenges still remain.

'From the start, I was very impressed by a high level of professionalism among our staff and a great deal of positive energy to change things for the better,' she said, remarking that unsatisfactory working conditions were a serious obstacle to progress. 'I am referring to the lack of modern equipment, new technologies and adequate software.'

Another serious problem were the low wages in the statistical sector. Ms Kotzeva explained that the frequent staff turnover was a problem that needed to be urgently addressed if one wanted to stop the brain drain of young professionals in the institute.

'It is no secret that many young people come to us to gather experience and deepen their knowledge of the field and then leave. They not only leave for the private sector but for other state institutions where salaries are higher,' the President said. 'Three years seem to be a cut-off point — if we keep staff here for three years they usually stay for good. As things are at the moment, 40 % of our workforce are over 50 years old.'



Bulgaria's integration within the European statistical system is a two-way process. 'We are working as partners, learning new things and, at the same time, passing on the acquired knowledge to other Balkan countries and several former Soviet Union republics,' said Ms Kotzeva. Pictured is the Rila Monastery in southern Bulgaria. © M. Waeytens

Increased media presence extremely important

An interesting aspect of the changing face of Bulgarian statistics is the much improved reception of its work among the general public and the media. 'A great advantage of EU accession is that it also helped change our image in society for the better,' Ms Kotzeva said. 'Many official institutions also suddenly realised how important our work is for the state.'

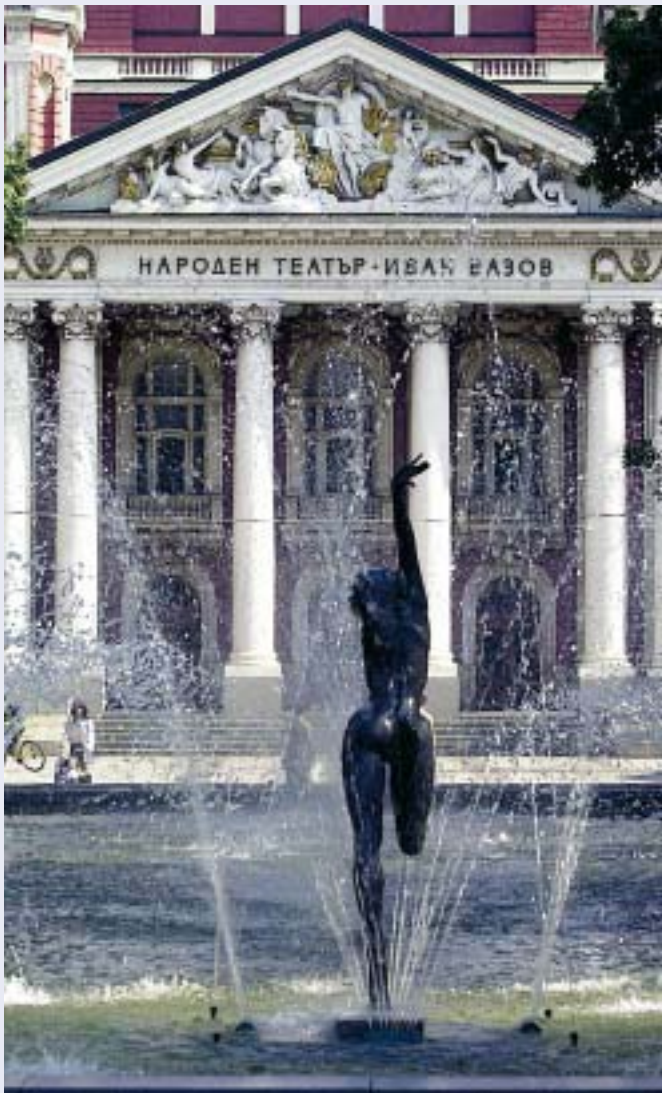
Ms Kotzeva aims to use this situation to further improve the understanding of statistical concepts among the members of the media and broader public. 'One of the first things I learned in my previous job as an adviser in the presidential administration is the importance of putting the user of statistical data first,' she remarked. 'If you do not explain what

you are doing from the start, in a clear, understandable language, you are bound to be wasting a lot of time doing it afterwards.'

This is why, immediately after becoming President of the institute, Ms Kotzeva started holding regular news conferences on the most popular topics, such as inflation, unemployment and income.

Attendance at news conferences proved high, as was the interest in the seminars on social statistics for journalists, jointly organised by the Bulgarian NSI and the Ministry of Labour and Social Policy in 2008.

'We try to keep the media informed and interested,' said Ms Kotzeva. 'As a result, I can tell you that terms such as structural indicators are these days being discussed in televi-



Among the challenges for the Bulgarian National Statistical Institute, Ms Kotzeva mentioned unsatisfactory working conditions. 'I am referring to the lack of modern equipment, new technologies and adequate software,' she explained. Pictured is the Ivan Vazov Theatre in Sofia.

© EPA Photo/Vassil Donev

'The deepening international statistical cooperation under the umbrella of the ESS brings concrete results in our daily work,' said Ms Kotzeva. She spoke of the increased cooperation between her institute and the German and French statistical offices.

'Our German and French colleagues have been providing us with some very useful tips on how to reorganise our regional structure and improve data dissemination. Thanks to their help, for instance, we were able not only to improve the quality of statistical surveys in Bulgaria but also to save a substantial amount of money on their preparation and execution.'

However, it is important to observe that Bulgaria's integration within the ESS is a two-way process. 'We are working as partners, learning new things and, at the same time, passing on the acquired knowledge to other Balkan countries and several former Soviet Union republics. To use a concrete example, Bulgarian experts also helped Albania and the former Yugoslav Republic of Macedonia in the preparation of population censuses and Armenia in compliance monitoring.'

With regard to the future, Ms Kotzeva remains assured. 'We have shown in the past that we are a reliable and trustworthy partner and will do our best to live up to this reputation. Every statistician knows that important political decisions are made daily using the effects of our science. The quality of reported data will therefore always remain paramount to me in my capacity as President of the Bulgarian National Statistical Institute.'

sion programmes, for instance in the context of the country's economic growth. It significantly increases our visibility and the understanding of our work within society.'

Development of the European statistical system crucial for the future

Asked about her view of Bulgaria's role within the European statistical system (ESS) and the cooperation with other members of the ESS, Ms Kotzeva acknowledged the great importance of the organisation for the restructuring of statistics in Bulgaria and their further evolution.

'The ESS is changing dynamically and these changes are welcomed by our institute. The speedy implementation of the European statistics code of practice, issues connected with quality management, priority setting, reducing the response burden and the simplification of procedures are as important to us at a national level as they are for the international statistical community as a whole.'

By Lukasz Augustyniak, Eurostat Communication Unit

National Statistical Institute of Bulgaria

The National Statistical Institute (NSI) is the main organisation in the Bulgarian statistical system. It consists of the Head Office, based in Sofia, and 28 regional offices, dealing with the collection and primary processing of statistical data. The NSI is managed by a president and two deputy presidents appointed by the Bulgarian Prime Minister for a period of seven years (with the possibility of a second term re-appointment). The beginnings of the Bulgarian NSI go back to 1880, when it was first created as a division within the Ministry of Finance. Today's NSI is fully independent and functions under the law on statistics from 1999, amended in 2001 to make it compliant with EU standards. The NSI employs 1 400 people, with around 400 of them working in the Sofia headquarters.

Tanya Alexandrova — 'Hard work but rewarding'

Tanya Alexandrova has worked at the Bulgarian National Statistical Institute (NSI) for eight years, she told *Sigma*, as we visited her in her small but well-organised office in the Sofia headquarters. 'In fact, it was my very first job and I came here straight from university,' she said. Ms Alexandrova graduated from the University of National and World Economy in Sofia, the very same where Assoc. Prof. Mariana Kotzeva used to teach statistics and econometrics before becoming President of the Bulgarian NSI in January 2008. She chose to work in the Employment and Earnings Unit, as labour economics is both her specialisation and preferred field of interest.



Tanya Alexandrova is in charge of the structure of earnings survey at the Bulgarian National Statistical Institute. © ECL Augustyniak

When Ms Alexandrova joined the NSI in 2000, the process of harmonisation with statistical *acquis* had just been started. Since then all core components of the European system of earnings and labour cost statistics have been implemented — the labour cost index, the four-yearly structural surveys on labour costs and structure of earnings, and a number of structural indicators — items virtually non-existent in Bulgarian statistics before.

A lot of progress has also been made as regards the quality of the data and the statistics production process as a whole. 'The dynamic and innovative nature of the work kept me highly motivated and deeply involved in my job,' said Ms Alexandrova.

Successful project

'I will never forget the responsibility of my first independent project entrusted to me only a year after I started working here,' she recalled. 'As part of the preparation for EU acces-

sion, I was put in charge of implementing the first full-scale structure of earnings survey (SES) — a complex and very demanding task!

The initial strain of having to go through numerous seminars, working groups and study visits abroad resulted in a close collaboration with a number of excellent foreign experts, many of whom have over the years become close

personal friends. 'I was really proud when, in 2004, we published the 2002 SES data,' said Ms Alexandrova. 'The results of the project were hailed as a big success towards a fully EU-compliant statistical production in the field of the earnings and labour cost statistics.'

Former Eurostat trainee

'One of the most interesting and enlightening experiences in my eight-year career as a statistician was a traineeship on labour market policy statistics at Eurostat in Luxembourg at the end of 2004,' said Ms Alexandrova. 'It was not only a very productive period for me professionally, as I learned a huge amount of new things from more experienced colleagues with different international backgrounds, but I also had lots of fun beside work — I loved the country, did a lot of hiking and made many new friends!'

The work experience gathered at Eurostat proved very useful to Ms Alexandrova. She participated closely in the de-



The work experience gathered at Eurostat as a trainee proved very useful to Ms Alexandrova. She participated closely in the development of the national labour market policy statistical database, a statistical field quite different from the work she had done before. Pictured is the Rotunda Church in Sofia. © EPA PHOTO / V.L Donev

velopment of the national labour market policy statistical database, a statistical field quite different from the work she had done before. 'I had to validate data from Member States, assist the LMP project team with data publication and stay in constant touch with the Bulgarian Ministry of Labour and Social Policy in regard to the ongoing LMP Phare project.' After her return to Sofia in spring 2005, Ms Alexandrova continued with the work started at Eurostat until the Phare project was concluded.

Having worked for the past eight years at the Bulgarian NSI, Ms Alexandrova witnessed all the excitement and stress connected with the EU accession preparations. 'It was hard work but also incredibly rewarding,' she recalled. 'The amount of pressure we all had to work under is hard to de-

scribe. Everyone knew that the accession date was firmly set and there was no alternative to full harmonisation with the European statistical system. We just had to get it done.'

Despite the fact that the buzz of the accession period is over, Ms Alexandrova's workload does not seem to diminish. 'I am currently working on the publication of data from the 2006 structure of earnings survey.' She added that the quality report on the survey results had to be completed by the end of 2008, as was a long list of other assignments. 'But I like it that way — with all this variety there is no chance I will ever get bored with my work,' she said with a smile.

By Lukasz Augustyniak, Eurostat Communication Unit

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Overview publications

Statistics in focus: This collection provides updated summaries of the main results of surveys, studies and statistical analyses. It is published for all the themes and comprises 4 to 12 pages per issue. More than 200 issues are published per year.

Data in focus: Similar to *Statistics in focus*, although the emphasis is on publishing the latest data as quickly as possible (with no accompanying analyses).

Statistical books: Comprehensive studies, often focusing on a particular subject; usually quite lengthy, providing analyses, tables and graphs from one or more statistical themes.

Pocketbooks: These are pocket-sized publications providing the main indicators for the European Union, the euro area, the Member States and their partners.

Methodologies and working papers: Intended for those who want to consult methodologies, nomenclatures, or specific studies on a particular data set.

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