In the spotlight – national accounts: key macro-economic indicators for monitoring the economic and financial crisis

Each year Eurostat's yearbook presents a topic that is of particular importance for European policy making. In 2010, the spotlight is on national accounts as a key instrument for monitoring and analysing the current state of the economic situation in the European Union (EU) and deriving appropriate national and European policy responses to the worst global financial and economic crisis since the 1930's.

Indeed, the bursting of the bubble in United States' mortgage markets that developed into a global financial market confidence crisis after the bankruptcy of Lehman Brothers in the autumn of 2008 had severe repercussions on the economic performance of many economies, including the EU-27 Member States. Central banks, financial supervisors and governments around the world had to take bold actions to stabilise the financial system and support their economies.

In Europe, the European Central Bank (ECB) acted in concert with other central banks to provide the financial system with additional liquidity; additional impetus was given to the economic recovery as interest rates remained at historically low levels. The European Commission launched the European Economic Recovery Plan (EERP) in December 2008 to restore confidence and bolster demand through coordinated actions. The total value of this package amounted to around EUR 200 000 million, equivalent to 1.5 % of the EU-27's GDP. The European Investment Bank (EIB) also responded to the economic crisis by increasing its annual level of financing by around EUR 15 000 million over two years. In May 2009, the European Commission built on recommendations of a high-level expert group (chaired by Jacques de Larosière) to present a Communication setting out the basic architecture for a new European financial super-

visory framework, with the target of having this operational in 2010. In parallel, many European governments took their own actions to stabilise their financial systems and supported their own economies with measures targeted at labour and product markets, such as short-time work or incentives to replace old cars (in particular, those that damaged the environment). However, increased fiscal stimuli and falling government revenues from income and consumption taxes increased public deficits above the ceiling of 3 % in most Member Stares, triggering the excessive deficit procedure (EDP) in accordance with the provisions of the stability and growth pact (SGP), and raising new policy challenges.

As information derived from national accounts and other macro-economic indicators have a crucial role for policymaking, this spotlight chapter starts with a presentation of the main elements of the European system of national and regional accounts (ESA), providing an explanation of the various types of accounts and balance sheets that make up this framework, for example the sector accounts and government finance statistics.

The next section presents some of the policy areas that rely on the availability of high quality national accounts data. These include notably the use of national and quarterly accounts for business cycle analysis, for example, to develop and monitor macro-economic policies, to support monetary policy decisions, and to analyse the development of public finances, particularly in the context of the stability and growth pact. ESA data also provide a basis for structural policies, for example in the context of the Lisbon Strategy and the EU 2020 Strategy. Another example presented is the use of regional accounts as the basis for the allocation of expenditure for the structural funds or the assessment of the results of regional and cohesion policy.

The third section uses national accounts data and related data to present an analysis of recent economic developments. A selection of macro-economic data, many of which are taken from quarterly national and sector accounts, presents a profile of the economic and financial crisis. The analysis notably shows the impact on output, investment, consumption, income, saving and wealth, as well as economic sentiment, inflation and unemployment. One advantage in comparison with the analysis traditionally presented in the subsequent chapters of this yearbook is that the majority of the data used in this spotlight chapter is presented for a quarterly frequency – and in some cases monthly frequency – instead of annual data, thereby allowing a more timely and nuanced analysis of the business cycle. The section closes with a presentation relating to the statistical implications of the financial and economic crisis.

The final section reviews the main challenges that lie ahead for national accounts and some of the responses that are already being developed and implemented. It notably presents efforts made to improve national accounts standards through the update of the system of national accounts (SNA) at a global level, as well as at the European level, by the revision of the ESA. The chapter concludes with a section that looks beyond the use of GDP as a single number to 'summarise

what is happening in the economy', and presents a number of initiatives to complement traditional national accounts indicators in order to be able to combine economic, social and environmental measures. In September 2009, two initiatives in this domain were unveiled, both of which underline the need to extend the traditional use that is made of national accounts statistics: the European Commission's Communication on 'GDP and beyond' and the so-called 'Stiglitz Report' on the measurement of economic performance and social progress.

1. National accounts – an overview

National accounts are a system of accounts and balance sheets that provide a broad and integrated framework to describe an economy, whether a region, a country, or a group of countries. For internationally comparable national accounts this system needs to be based on common concepts, definitions, classifications and accounting rules, in order to arrive at a consistent, reliable and comparable quantitative description of an economy. National accounts provide systematic and detailed economic data useful for economic analysis to support the development and monitoring of policy-making. This section provides a brief description of various types of accounts.

1.1 General features of national accounts

National accounts record economic activities in a systematic manner, distinguishing actors belonging to institutional sectors such as households, corporations and government. The system describes the various transactions or other changes in assets (flows) during a period of time as well as the level (normally at the end of a period of time) of stocks. A particular focus on the monitoring of fiscal policies in the EU is reflected through the development of government finance statistics (Point 1.7). The recent financial and economic crisis has also underlined the importance of financial accounts (Point 1.8), which present financial transactions, other changes in financial assets or liabilities, and financial balance sheets. Furthermore, national accounts serve as the foundation of a broader statistical system. This is the case for social and economic statistics in general (Section 4), and for satellite accounts in particular (Point 1.10).

The European system of national and regional accounts

The European system of national and regional accounts ([6]) known by the abbreviation ESA is fully consistent with the worldwide guidelines on national accounting, namely the system of national accounts (SNA): the SNA is published jointly by the United Nations, the Commission of the European Communities, the International Monetary Fund, the Organisation for Economic Cooperation and Development and the World Bank.

The ESA is not restricted to annual national accounting, but applies also to quarterly accounts and regional accounts, and these three types of accounts are presented under Points 1.2, 1.3 and 1.9 below. The ESA consists of two main sets of tables, namely the input-output framework/accounts by industry and the sector accounts, which

([6]) For more information: http://circa.europa.eu/irc/dsis/nfaccount/info/data/ESA95/en/esa95en.htm.

are presented under Points 1.5 and 1.6. The ESA also encompasses concepts of population and employment (Point 1.4) that are relevant for both the sector accounts and the input-output framework.

The compilation of the accounts

National accounts are compiled separately by each Member State, more specifically by the national statistical office or another institution appointed by the government, for example, the national central bank. The accounts are the result of a process of integration of data from many sources, for example, statistical surveys of businesses and households and administrative data. European national accounts are compiled by Eurostat by combining Member States' national accounts. For this purpose countries are required to provide Eurostat with a pre-specified data set according to a fixed transmission timetable.

1.2 Annual accounts

Annual data constitute the core of the national accounts system, both regarding their level of detail and their use for the estimation of quarterly data (see Point 1.3). Data within the national accounts domain encompasses information on the gross domestic product (GDP) and its components, final consumption aggregates, income, savings and employment. Breakdowns exist for certain variables by economic activity (as defined by the activity classification, NACE), investment products, final consumption purpose and institutional sectors. Further explanations on definitions and data availability as well as some main findings in relation to annual national accounts are presented within Subchapter 1.1 of this yearbook, as part of the chapter on the economy.

Box 1: gross domestic product (GDP)

The most frequently used measure for the overall size of an economy is gross domestic product (GDP). GDP at market prices is the total monetary value of the production activity of all producer units within a certain area (for example, a national territory), no matter whether the units are owned by nationals or foreigners.

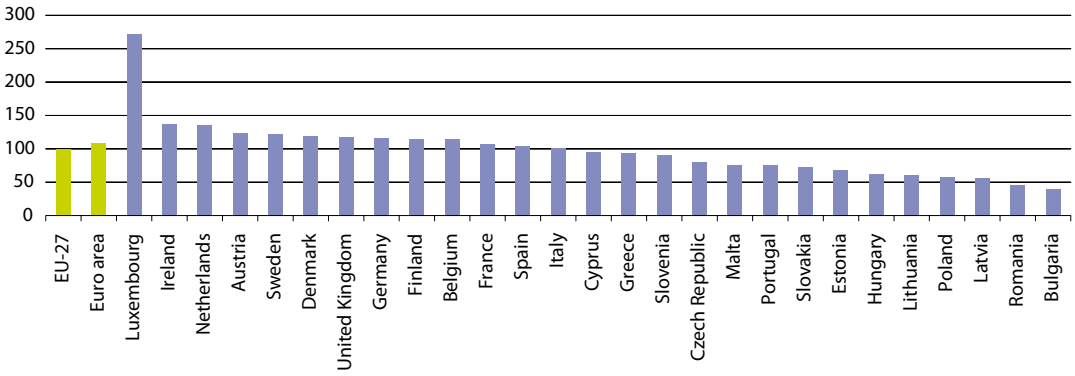
GDP, and in particular GDP per capita, is one of the main indicators used for general economic analysis, as well as spatial and/or temporal comparisons.

GDP can be defined and calculated in three ways:

- **the output approach:** as the sum of gross value added of the various institutional sectors or the various industries, plus taxes and less subsidies on products;
- **the expenditure approach:** as the sum of final uses of goods and services by resident institutional units (final consumption and gross capital formation), plus exports and minus imports of goods and services;
- **the income approach:** as the sum of the compensation of employees, net taxes on production and imports, gross operating surplus and mixed income.

Figure 1 provides an example of one of the most common analysis of data from national accounts. The analysis of GDP across countries is facilitated by studying GDP per capita, so removing the influence of the absolute size of the population. GDP per capita is often considered as a broad economic indicator of living standards, despite the fact that this is not the main purpose of such an indicator. An index of GDP per capita in relation to the EU average (set to equal 100) can be derived: if the index of a country is higher/lower than 100, this country's level of GDP per head is above/below the EU-27 average. Such comparisons of the economic activity of countries should ideally be made using a series that reflects the purchasing power of each currency, rather than using market exchange rates, and as a result this indicator is generally expressed in purchasing power standards (PPS).

Figure 1: GDP per capita in purchasing power standards (PPS), 2008 (1)
(EU-27=100)



(1) Greece, provisional; Austria and Romania, forecasts; Slovakia, estimate.

Source: Eurostat (tsieb010)

1.3 Quarterly accounts

The motivation for quarterly accounts stems from some of the shortcomings of annual data that make them unsuitable for the purpose of supporting short-term economic analysis, for example:

- ongoing economic policy decisions, which require prompt information on economic developments are inadequately supported, especially for the current year;
- business cycle fluctuations are not adequately captured because the average period of the cycle does not generally coincide with calendar years;
- there is a long delay after the end of the reference period before the figures are published.

Quarterly accounts have the advantage of being able to provide a coherent set of indicators on both non-financial and financial economic activity that are available with a short time lag. They have thus been developed to form an integral part of the system of accounts. A chapter on quarterly national accounts was introduced in the 1995 version of the ESA and Eurostat published a separate manual, a 'Handbook on quarterly accounts' in 1999. This aims to ensure that quarterly accounts adopt the same principles, definitions and structure as the annual accounts, subject to certain modifications, due to the period of time covered.

However, quarterly data follow a simplified scheme because the purpose of quarterly accounts is to track movements in key macro-economic aggregates, not to provide the same structural detail of the economy as the annual accounts, and to aid rapid compilation, recognising that there are less data available quarterly. Some further particularities of the quarterly accounts include the treatment of seasonality, and ensuring consistency between quarterly and annual accounts.

The statistical methods used for compiling quarterly accounts may also differ quite considerably from those used for the annual accounts. They can be classified in two major categories: those based on the availability at quarterly intervals, with appropriate simplifications, of similar sources to those used to compile the annual accounts; and indirect procedures based on time disaggregation of the annual accounts data in accordance with mathematical or statistical methods relying on appropriate quarterly indicators. In some systems, the annual accounts are a by-product of the quarterly system and there is no separate annual calculation.

The increasing role that the quarterly accounts have assumed in recent years demonstrates their importance for short-term economic analysis and justifies the increasing efforts devoted to compiling them. As all Member States compile quarterly accounts, EU-27 and euro area aggregates are, in principle, obtained through the aggregation of the data from the Member States. Eurostat regularly estimates the quarterly EU accounts from annual EU accounts using quarterly information that is available from the Member States. The main reason for this approach is the strong demand for timely quarterly accounts, as business cycle analysis requires quarterly results for the EU-27 and in particular the euro area much earlier than the arrival of data for the last of Member States. Eurostat publishes GDP flash estimates about 45 days after the end of each quarter and more detailed breakdowns with the first and second regular estimates after 65 days and 105 days. Quarterly estimations of employment figures are released after 75 days and 105 days and quarterly sector accounts after 120 days. A broad selection of figures based on quarterly national accounts data are presented under Point 3.1.

1.4 Employment

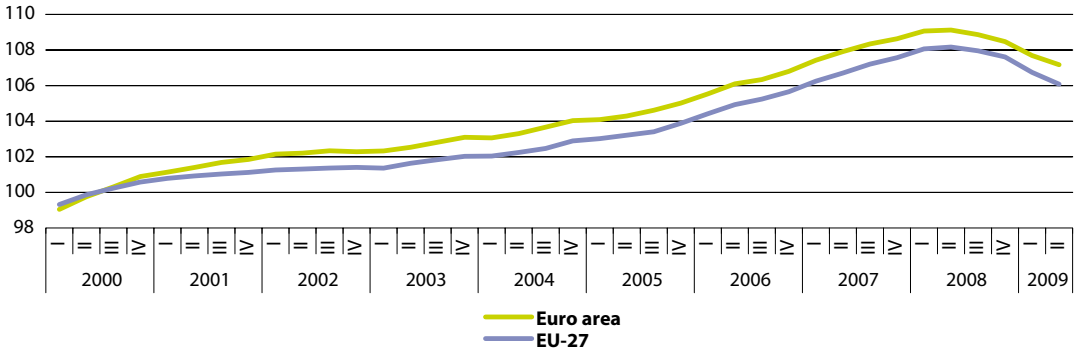
Employment and population have traditionally been considered auxiliary variables in national accounts, intended to calculate ratios per inhabitant or per employed person. The importance of employment within the system has increased, and is now considered as a key

short-term economic indicator. Employment in national accounts is the result of the integration of data from many sources, and should be estimated simultaneously to and consistently with other national accounts variables, like output and the compensation of employees.

However, it should be kept in mind that employment figures in national accounts may differ from those produced by labour market statistics, such as the labour force survey (LFS), which also provides data on employment and unemployment, broken down by gender or other characteristics of the individual. The ESA distinguishes resident persons in employment (the national scope) from employment in resident production units (the domestic scope): the difference is significant for geographical areas with large cross-border flows of persons employed. Notably the LFS focuses on resident households, and so is closer to the national scope definition in the ESA, but there are also other differences between the ESA and LFS employment data.

Figure 2 presents the evolution of employment in the EU-27 and the euro area –consistent with the national accounts concepts. Using seasonally adjusted data, the figure illustrates that the number of persons employed progressively accelerated over the past decade until the economic and financial crisis provoked a setback in European labour markets from mid-2008.

Figure 2: Employment index, domestic concept, seasonally adjusted (2000=100)



Source: Eurostat (namq_aux_pem)

1.5 Supply, use and input-output tables

The supply and use framework is the part of the national accounts system which focuses on the production and use of goods and services in an economy. It reflects the activities of industries in which intermediate products and primary inputs (such as labour and capital) are required. Supply and use tables show where and how goods and services are produced and to which intermediate or final use they flow.

The input-output framework consists of three types of tables: supply and use tables, symmetric input-output tables and tables linking the supply and use tables to the sector accounts; these are an integral part of the ESA. Compilation issues and harmonised solutions are presented in the Eurostat manual of supply, use and input-output tables.

These tables describe the production process (such as the cost structure and the generation of income) by industry or activity and the use of goods and services (output, imports, exports, final consumption, intermediate consumption and capital formation by product group). Within the national accounts system the supply, use and input-output tables offer the most detailed portrait of an economy's production and use activities and also provide a consistent framework for balancing national accounts.

These tables show among others:

- the structure of the costs of production and the value added, which is generated in the production process;
- the inter-dependencies of industries;
- the flows of goods and services produced and used within the national economy;
- international trade in goods and services with the rest of the world.

Supply tables record how products are made available in an economy: this may be output from a range of domestic industries or imports.

Table 1: Simplified supply table

Products	Industries: 1, 2, …, n	Imports	Total
1 2 ⋮ n	Matrix of the output of each product by each industry	Imports of each product	Total supply (output + import) of each product
Total	Total output by each industry	Total imports	Total supply

In a similar manner the use of the same list of products can be analysed differentiating the use for intermediate consumption of domestic industries or final uses such as final consumption, fixed capital formation or exports. Use tables also show the components of value added (such as compensation for employees or consumption of fixed capital) by industry. The framework must fulfil two identi-

ties. The output of each industry is equal to the sum of intermediate consumption plus value added. For each product, total supply (output plus imports) equals the sum of intermediate consumption, final consumption, gross capital formation and exports.

Table 2: Simplified use table

	Industries: 1, 2, …, n	Final uses				Total
		Final consumption	Gross fixed capital formation	Change in inventories	Exports	
Products **1** **2** ⋮ **n**	Matrix of the intermediate consumption of each product by each industry	Final consumption of each product	Gross fixed capital formation of each product	Change in inventories of each product	Exports of each product	Total use (intermediate consumption + final uses) of each product
Value added **— compensation of employees** **— consumption of fixed capital** **— net operating surplus**	Matrix of the value added components by each industry					Total value added of each product
Total	Total output by each industry: intermediate consumption + value added	Total final uses by category				Total use

A symmetric input-output table is a product-by-product (or industry-by-industry) matrix: it rearranges both supply and use in a single table with a single, identical product (or industry) classification applied for both rows and columns.

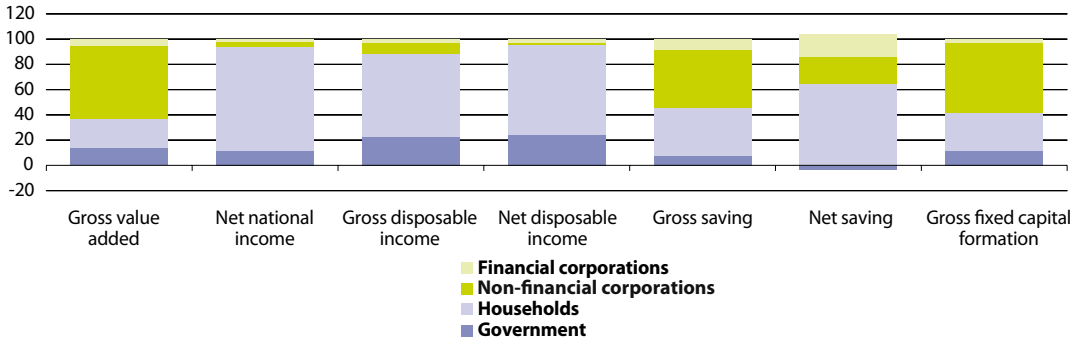
1.6 Sector accounts

Sector accounts provide, by institutional sector, a systematic description of the different stages of the economic process, from production through to the use of income and financial and non-financial accumulation. The sector accounts also include balance sheets to describe the stocks of assets, liabilities and net worth. The European Central Bank (ECB) and Eurostat publish quarterly EU and euro area accounts by institutional sector, and recently key indicators for Member States have also been published.

Macro-economic developments, such as economic growth and inflation, are driven by the actions of the individual economic subjects in an economy. The institutional sectors combine institutional units with broadly similar characteristics and behaviour: households and non-profit

institutions serving households (NPISHs), non-financial corporations, financial corporations, and government. Grouping economic subjects with similar behaviour into institutional sectors helps to understand the functioning of the economy. Transactions with non-residents and the financial claims of residents on non-residents, or vice versa, are recorded in a separate account referred to as the rest of the world.

Figure 3: Shares of institutional sectors in key aggregates, EU-27, 1999-2008 average (%)



Source: Eurostat (nasa_simplif) and European Central Bank (ECB)

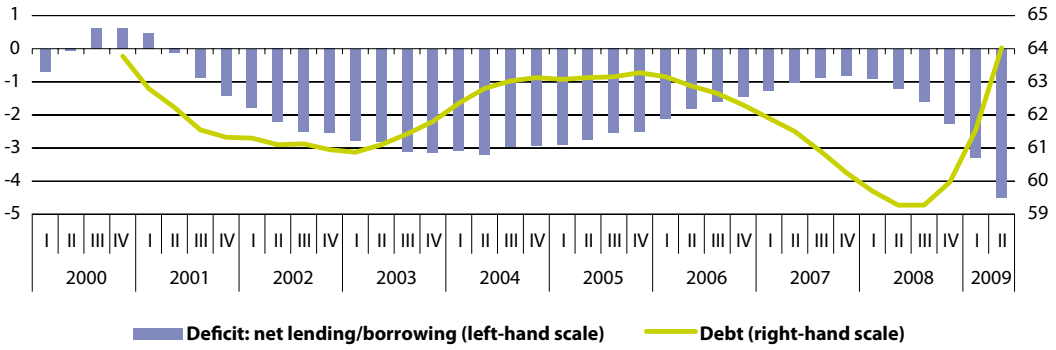
Figure 3 presents the shares of institutional sectors in key national accounts aggregates. The households sector comprises all households and household firms, such as sole proprietorships and most partnerships that do not have an independent legal status. Therefore, the households sector, in addition to consumption, also generates output and entrepreneurial income. For presentational reasons, non-profit institutions serving households (NPISHs), such as charities and trade unions, are grouped in the European accounts with households; their economic weight is relatively limited. The non-financial corporations sector comprises all private and public corporate enterprises that produce goods or provide non-financial services to the market. Accordingly, the government sector excludes non-market public enterprises and comprises central, state (regional) and local government and social security funds. The financial corporations sector comprises all private and public entities engaged in financial intermediation, such as monetary financial institutions (predominantly banks), investment funds, insurance corporations and pension funds. A selection of data based on quarterly sector accounts is presented under Point 3.1.

1.7 Government finance statistics

Government finance statistics (GFS) present the economic activities of government in a harmonised and comparable way. GFS may differ noticeably from nationally-specific budget or public accounting presentations as far as the scope of units and the recording of transactions are concerned. The GFS present revenue, expenditure and deficit, as well as transactions in assets, liabilities, other economic flows, and balance sheets. They are fully consistent with the general government sector within the national accounts, but have a different (integrated) presentation for users.

The GFS attract particular attention as they form the basis for fiscal monitoring in Europe, notably statistics related to the excessive deficit procedure (EDP). The EDP is defined by Article 104 of the Treaty on European Union (the so-called Maastricht Treaty), which foresaw the creation of the euro. The Treaty obliges Member States to comply with budgetary discipline by adhering to two criteria: a deficit to GDP ratio and a debt to GDP ratio not exceeding reference values of 3 % and 60 % respectively, as defined in the Protocol on the EDP annexed to the Treaty; these reference values are based on GFS concepts. The government deficit is the net lending/net borrowing of government as defined in the ESA, adjusted for the treatment of interest relating to swaps and forward rate agreements. Government debt is defined as the total consolidated gross debt at nominal value in the following categories of government liabilities: currency and deposits, securities other than shares excluding financial derivatives, and loans.

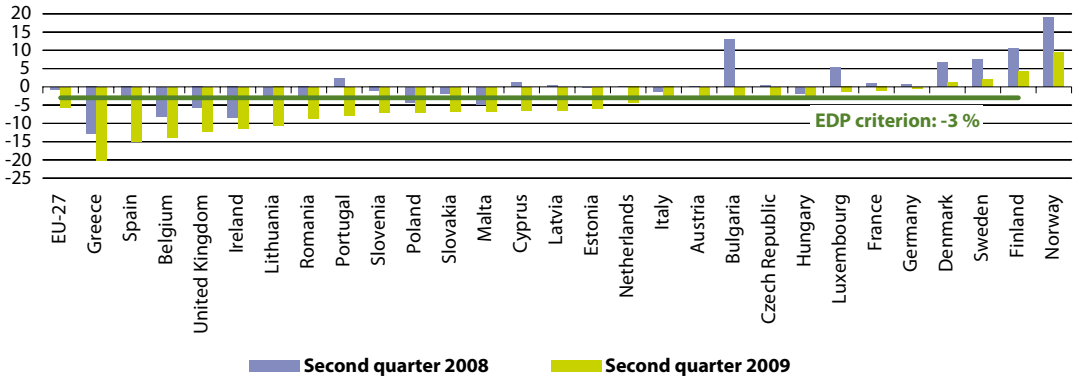
Figure 4: Government deficit and debt as a percentage of GDP, four-quarter moving average, EU-27 (%)



Source: Eurostat (gov_q_ggnfa and gov_q_ggdebt)

The ESA95 manual on government debt and deficit (MGDD) provides interpretation and guidance to establish agreed methodological practices for the measurement of government deficit and debt. The European Commission is responsible for providing the data used for the EDP, and within the European Commission this task is undertaken by Eurostat on the basis of GFS statistics provided by the Member States.

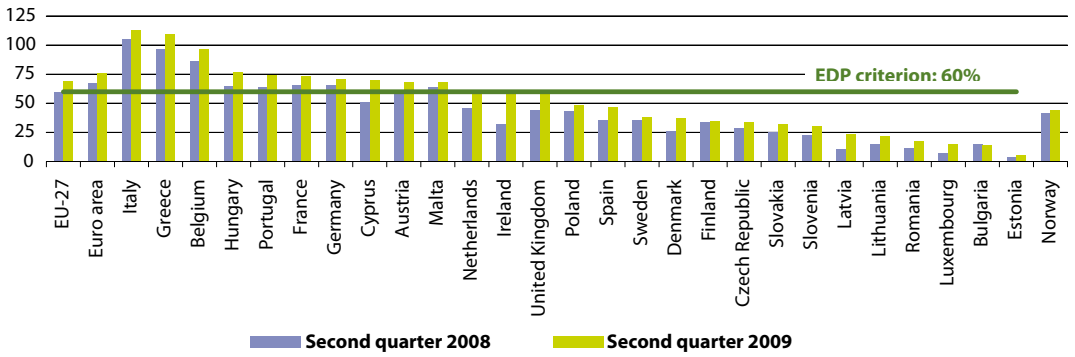
Figure 5: Government deficit, net borrowing (-)/lending (+) as a percentage of GDP ([1])
(%)



([1]) Germany and France, fourth quarter of 2007 and fourth quarter of 2008; Belgium, first quarter of 2008 and first quarter of 2009.

Source: Eurostat (gov_q_ggnfa)

Figure 6: Government debt as a percentage of GDP
(%)



Source: Eurostat (gov_q_ggdebt)

1.8 Financial accounts

Within the ESA, financial accounts show financial transactions, holding gains and losses, other changes in financial assets or liabilities, and the financial balance sheets. The compilation of these accounts is the subject of a manual on sources and methods for the compilation of ESA95 financial accounts. Most transactions involving the transfer of ownership of goods or assets or the provision of services have some counterpart entry in the financial account. The counterpart may take the form of a change in currency or transferable deposits, an account receivable or payable (for example, a trade credit) or some other type of financial asset or liability. Moreover, there are many transactions that are recorded entirely within the financial account, where one financial asset is exchanged for another or a liability is repaid with an asset. Such transactions change the distribution of the portfolio of financial assets and liabilities and may change their total amounts but do not affect net lending/net borrowing.

Accounts on financial transactions show how the surplus or deficit on the capital account is financed by transactions in financial assets and liabilities. Thus, the value of the balance of the financial account (net acquisition of financial assets less net incurrence of liabilities) is equal, in theory, to net lending/net borrowing, the balancing item of the capital account. The financial account indicates how net borrowing sectors obtain resources by incurring liabilities or reducing assets, and how net lending sectors allocate their surpluses by acquiring assets or reducing liabilities. The account also shows the contributions to these transactions of the various types of financial assets, and the role of financial intermediaries.

In addition, accounts on nominal holding gains/losses show the gains/losses on a given quantity of an asset/liability as the change in value for the owner of that asset/liability as a result of change in prices or exchange rates. Any changes in financial assets and liabilities that are not due to financial transactions, holding gains and losses or reclassifications are recorded as other changes in volume, for example, write-offs of bad debt.

Financial balance sheets are statements of the value of assets and liabilities at a particular point in time: the balancing item is net worth or, in the case of the whole economy, national wealth – the aggregate of non-financial assets and net claims on the rest of the world.

Financial accounts form an important tool for analysing financial flows taking place between well-defined institutional sectors within the economy, and between those institutional sectors and the rest of the world, and for assessing financial interrelationships within the economy and vis-à-vis the rest of the world at a particular point in time. Because of their link with the capital and use of income accounts, financial accounts serve as an important instrument to monitor the transmission process of monetary policy. The completeness of financial accounts makes possible the analysis of monetary aggregates as well as the analysis of longer-term financial investments and sources of finance. Consequently, the financial accounts provide a way of examining the financial effects of economic policy and assistance for decisions regarding future

policy. They can be used to investigate factors influencing the holdings of and transactions in, different types of financial instruments, for example, changes in interest rates.

For financial institutions the financial account shows the large amounts of funds which are channelled through them as financial intermediaries. The scale of this makes it important to be aware of changes in their sources of funds and in their use of those funds. The transactions of financial institutions reflect the liquidity, current and capital expenditure of other sectors, and the financing of the government sector net cash requirement.

The financial balance sheets show the financial worth of each sector of the economy at a particular point in time. The changes from previous balance sheets illustrate both the change in the valuation of different instruments (for example, as stock markets move or currency exchange rates change) and the changing portfolios resulting from the financial transactions of the sectors. This allows the measurement of so-called 'wealth effects' through the change in the market prices of assets.

1.9 Regional economic accounts

Regional accounts are a regional specification of the corresponding accounts of the total economy. A full set of accounts at the regional level implies treating each region as a separate economic entity. In this context, transactions with other regions become external transactions. Conceptual difficulties partly explain why regional accounts are limited to recording production activities by industry and to accounts for some institutional sectors like households.

Nevertheless, regional accounts do provide information in particular on regional GDP, regional gross value added and some other indicators by industry. As already noted for national accounts it is common to present GDP as an average per inhabitant and for regional statistics the distinction between place of work and place of residence is therefore particularly significant. Regional GDP measures the economic output achieved within regional boundaries, regardless of whether this was attributable to resident or non-resident employed persons. The analysis of GDP per inhabitant is therefore only straightforward if all employed persons involved in generating GDP are also residents of the region in question. In areas with a high proportion of inbound commuters, regional GDP per inhabitant can be extremely high and conversely it can be relatively low in the surrounding regions. Regional GDP can be used to identify regional disparities within and between countries, as well as convergence between regions. A map of regional GDP per inhabitant is presented in Chapter 13.

1.10 Satellite accounts

For some uses, the concepts in the ESA are insufficient and may need to be supplemented. One of the ways this can be done in a coherent manner is through the development of satellite accounts. Satellite accounts can show more detail where necessary, or they may enlarge the scope of the accounting system by adding non-monetary information, or they may change some basic concepts – for example, by enlarging the concept of capital formation. Generally, satellite accounts follow the basic concepts and classifications of the national accounting

system, only deviating when the specific purpose of the satellite account requires a modification.

Satellite accounts may include stocks and flows which are not readily observable in monetary terms (or without a clear monetary counterpart) as these are not well served by the core national accounts system. Examples are measuring time usage for production within households, or information on the number of pupils or time spent in education, or the health of trees as an indicator of pollution. Satellite accounts offer a possibility to link such statistics in non-monetary units to national accounts by using the classifications employed in the standard framework for these non-monetary statistics. This linkage can then facilitate the analysis of interactions between the standard national accounts information and the information in satellite accounts.

One example of a satellite account where considerable development has been made within the United Nations and the EU is environmental accounts, which are a tool to analyse the links between the environment and the economy. These can be used, for example, to analyse to what extent our current production and consumption patterns are degrading natural resources, or to measure the environmental effects of economic policy measures. Some information and data relating to environmental accounts is presented in Subchapter 11.5.

Another example of satellite accounts is the tourism satellite account for which a new joint methodological framework was released in 2008 by the United Nations, Eurostat, the OECD and the World Tourism Organisation (WTO).

The extent of the use of satellite accounts is growing, and these accounts will likely have a more prominent place in the revised ESA, for example, for social protection statistics – see Point 4.3.

2. Main users of national accounts statistics

European institutions, governments, central banks as well as other economic and social bodies in the public and private sectors need a set of comparable and reliable statistics on which to base their decisions. National accounts can be used for various types of analysis and evaluation. For instance, an analysis of the structure of the economy can be used to show the level or share of value added and employment in each industry, or the final consumption expenditure dedicated to different product groups. Analysis may focus on specific parts or aspects of an economy – for example, banking and finance, or the role of government. National accounts may also be analysed over time to show changes in an economy, for example, the development of GDP, or a comparison of the structure of two economies. The use of internationally accepted concepts and definitions also permits an analysis of different economies, such as the interdependencies between the economies of the EU, or a comparison between the EU and non-member countries. This section portrays some of the main uses and users of national accounts data.

2.1 Business cycle and macro-economic policy analysis

One of the main uses of national accounts data relates to the need to support European economic policy decisions and the achievement of EMU objectives with high-quality short-term statistics that allow the monitoring of macro-economic developments and the derivation of macro-economic policy advice. For instance, one of the most basic and long-standing uses of national accounts is to quantify the rate of growth of an economy, in simple terms the growth of GDP. However, national accounts are used much more widely than this. Core national accounts figures are notably used to develop and monitor macro-economic policies, while detailed national accounts data can also be used to develop sectoral or industrial policies, particularly through analysis of input-output tables. In some economies national accounts have been used to develop and monitor economic plans. Among the European institutions, national accounts are used in a wide range of areas, including to support monetary policy decision-making, economic research and policy analysis, macro-economic forecasting, and fiscal surveillance.

The ECB and European Monetary Union

Since the beginning of the EMU in 1999, the European Central Bank (ECB) has been one of the main users of national accounts. The primary objective of the ECB and its single monetary policy is the maintenance of price stability in the euro area, and in this respect the key indicator is inflation, measured through the harmonised index of consumer prices (HICP). The ECB's strategy for assessing the risks to price stability is based on two analytical perspectives, referred to as the 'two pillars': economic analysis and monetary analysis. A large number of monetary and financial indicators are thus evaluated in relation to other relevant data that allow the combination of monetary, financial and economic analysis, for example, key national accounts aggregates and sector accounts. In this way monetary and financial indicators can be analysed within the context of the rest of the economy. As detailed under Point 1.6, the ECB and Eurostat have joined forces to produce European sector accounts on an annual and quarterly basis, which link financial and non-financial statistics and include consistent financial balance sheets. They provide a large range of indicators on the development of the economic situation in various institutional sectors, for example regarding income, expenditure, investment and outstanding debt for households, or the level of investment and debt of non-financial corporations.

Economic policy analysis

The European Commission is another main user of national accounts across a wide range of areas. Its services regularly use these data for designing and assessing their policies. The Directorate-General for Economic and Financial Affairs (DG ECFIN) develops research tools and analyses data to guide and support policy-making in the European Commission in general. One area of key research is the functioning of economic and monetary union, however, the analyses conducted covers a broad range of issues from financial stability or

an assessment of economic convergence in the context of enlargement, to how structural reforms contribute to macro-economic performance or the economic implications of ageing populations. The research tools that underpin DG ECFIN's work on economic policy coordination and surveillance include macro-economic and econometric models, business and consumer surveys, economic databases and macro-economic forecasts.

Macro-economic forecasting

DG ECFIN also produces the European Commission's macro-economic forecasts twice a year, in the spring and autumn. These forecasts cover all EU Member States in order to derive forecasts for the euro area and the EU-27, but they also include outlooks for candidate countries, as well as some non-member countries. Each forecast has at least a two-year time horizon (with an additional year added each autumn) covering the current year and the next. In between the spring and autumn forecasts, interim forecasts are produced in which an update of real GDP growth and inflation is estimated for the seven largest Member States and for the current year only. While the biannual forecasts are built on detailed country by country analysis, interim forecasts are largely prepared using indicator-based models.

Fiscal policy and the stability and growth pact

The analysis of public finances through national accounts is another well established use of these statistics. Within the EU a specific application was developed in relation to the convergence criteria for EMU, two of which refer directly to public finances. These criteria have been defined in terms of national accounts figures, namely, government deficit and government debt relative to GDP.

As noted under Point 1.7 above, the Treaty on European Union (Maastricht Treaty) established limits for government deficits and debt. Under the provisions of the stability and growth pact (SGP) the Member States have to submit annual stability (convergence) programmes, showing how they intend to achieve or safeguard sound fiscal positions in the medium-term, taking into account the impending budgetary impact of population aging and other factors. The European Commission assesses these programmes and the Council gives its opinion on them. The SGP also governs the excessive deficit procedure (EDP): the EDP is triggered when the deficit breaches the 3 % GDP threshold of the Treaty. If it is decided that the deficit is excessive in the meaning of the Treaty, the Council issues recommendations to the Member States concerned to correct their excessive deficits and gives a timeframe for doing so. Non-compliance with the recommendations triggers further steps in the procedures, including the possibility of sanctions for euro area Member States.

However, it should be noted that these two criteria relating to public finances do not synthesise all the information about public finances, and a much broader range of indicators (than these two headline figures) is considered useful for monitoring purposes – for example, the composition of revenue raising activities and the purposes for which government expenditure is made.

2.2 Regional, structural and sectoral policies

As well as business cycle and macroeconomic policy analysis, there are other policy-related uses of ESA data, notably concerning regional, structural and sectoral issues.

Regional policy

The allocation of expenditure for the structural funds is partly based on regional accounts. Furthermore, regional statistics are used for ex-post assessment of the results of regional and cohesion policy.

The EU's regional policy aims to strengthen economic, social and territorial cohesion by reducing differences in the level of development among regions and Member States. For the period 2007-2013 a budget of EUR 347 410 million is foreseen ([7]), equivalent to more than one third of the whole EU budget. The main concerns of the policy for 2007 to 2013 are:

- convergence – 81.5 % of the funds available;
- (regional) competitiveness and employment – 16 % of the funds available;
- territorial cooperation – 2.5 % of the funds available.

Convergence regions are NUTS ([8]) level 2 regions whose GDP per inhabitant (measured in purchasing power standards and on the basis of a three year average) is less than 75 % of the EU-25 average; in other words, the poorest regions and Member States. These 84 regions (based on regions according to the 2003 version of the NUTS classification) have a total population of 154 million inhabitants.

All other NUTS level 2 regions, of which there are 168, are eligible under the regional competitiveness and employment objective, which aims to strengthen competitiveness, attractiveness and employment. Special financing will be provided to 13 'phasing-in' regions as they formerly had the equivalent status to convergence regions.

Several instruments are used to implement regional policy, notably the European Regional Development Fund (ERDF) and the Cohesion Fund. The ERDF operates in all Member States but is concentrated on the poorest regions and co-finances investments and training. The Cohesion Fund mainly co-finances transport networks and environment projects. Member States whose gross national income per inhabitant is less than 90 % of the EU average are eligible: for the period 2007-2013 the Cohesion Fund concerns the Member States that joined the EU in 2004 and 2007, as well as Greece and Portugal; Spain is eligible to a phase-out fund.

Analysis of structural reforms

Encouraging more growth and more jobs is a strategic priority for both the EU and the Member States, and is part of the revised Lisbon and EU 2020 strategies. In support of these strategic priorities, common policies are implemented across all sectors of the EU economy while the Member States implement their own national structural reforms. The effects of these policies and reforms may spread across the EU as a result of the economic links between Member States. To ensure that this is as beneficial as possible, and to prepare for the challenges that lie ahead,

([7]) For more information: http://ec.europa.eu/regional_policy/policy/fonds/index_en.htm.

([8]) NUTS: common classification of territorial units for statistics.

the European Commission rigorously analyses all these policies.

Agricultural policy

The European Commission conducts economic analysis contributing to the evolution of the Common Agricultural Policy (CAP) by analysing the efficiency of its various support mechanisms and developing a long-term perspective. This includes research, analysis and impact assessments on topics related to agriculture and the rural economy in the EU and non-member countries, in part using the economic accounts for agriculture (satellite accounts).

2.3 Target setting, benchmarking and contributions

Target setting

Policies within the EU are increasingly setting medium or long-term targets, whether binding or not. For some of these, the level of GDP is used as a benchmark denominator, for example, setting a target for expenditure on research and development at a level of 3 % of GDP.

Another example concerns official development assistance (ODA), which consists of grants or loans that are undertaken by the official sector with promotion of economic development and welfare in the recipient countries as the main objective. The EU agreed to increase its ODA as a step towards the 0.7 % target set by the United Nations. In 2005 the EU made additional commitments to collectively reach official development assistance of 0.56 % of GNI by 2010, underpinned by an individual target of 0.17 % for the 12 newest Member States and 0.51 % for the others, with those Member States that have already reached their targets keeping higher aid levels.

Budgetary contributions

National accounts are also used to determine EU resources. The basic rules on the system of the EU's resources are laid down in a Council Decision (currently 2000/597/EC, Euratom). The overall amount of own resources needed to finance the budget is determined by total expenditure less other revenue. The total amount of own resources cannot exceed 1.24 % of the gross national income of the EU.

Own resources can be divided into the following categories:

- Traditional own resources consist of customs duties, agricultural duties and sugar levies. These own resources are levied on economic operators and collected by Member States on behalf of the EU. However, Member States keep 25 % as a compensation for their collection costs.

Table 3: National contribution by Member State and traditional own resources collected on behalf of the EU, 2007
(EUR million)

	VAT-based resource	GNI-based resource (1)	UK correction	Traditional own resources	Total	Total (% of GNI)
EU-27 (2)	19 441	73 915	59	16 573	109 988	0.9
Belgium	469	1 986	233	1 685	4 372	1.3
Bulgaria	46	163	21	61	291	1.0
Czech Republic	200	704	84	179	1 167	1.0
Denmark	333	1 394	163	330	2 219	1.0
Germany	3 635	14 654	294	3 127	21 710	0.9
Estonia	27	96	11	43	177	1.2
Ireland	276	972	120	218	1 586	1.0
Greece	698	1 947	146	230	3 020	1.4
Spain	1 723	6 073	752	1 290	9 838	1.0
France	3 114	11 216	1 327	1 333	16 989	0.9
Italy	2 030	9 144	1 163	1 687	14 024	0.9
Cyprus	25	88	11	46	170	1.1
Latvia	35	118	15	31	199	1.0
Lithuania	47	158	20	45	271	1.0
Luxembourg	53	202	21	19	296	1.0
Hungary	138	547	75	111	870	0.9
Malta	9	33	4	12	57	1.1
Netherlands	936	3 401	92	1 874	6 303	1.1
Austria	409	1 565	43	201	2 218	0.8
Poland	509	1 746	216	338	2 809	1.0
Portugal	269	940	114	137	1 460	0.9
Romania	162	682	86	159	1 089	0.9
Slovenia	56	198	23	83	359	1.1
Slovakia	85	303	42	91	519	1.0
Finland	261	1 088	132	149	1 629	0.9
Sweden	487	1 949	41	438	2 915	0.9
United Kingdom	3 410	12 551	-5 189	2 657	13 429	0.7

(1) For simplicity of the presentation, the GNI-based own resource includes the adjustment for certain justice and home affairs (JHA) policies where Member States choose not to participate.
(2) Total UK correction payments are not equal to zero on account of exchange rate differences.

Source: EU budget report 2007, European Commission

- The own resource based on value added tax is levied on Member States' VAT bases, which are harmonised for this purpose in accordance with Community rules. The same percentage is levied on the harmonised base of each Member State. However, the VAT base to take into account is capped at 50 % of each Member State's GNI. This rule is intended to avoid that the less prosperous Member States pay out of proportion to their capacity, since consumption and hence VAT tend to account for a higher percentage of a country's national income at relatively lower levels of prosperity. The contributions by the Member States for the VAT resource are largely affected by national accounts figures, as these are used to calculate the average VAT rate.
- The resource based on gross national income is used to balance budget revenue and expenditure, in other words, to finance the part of the budget not covered by any other sources of revenue. The same percentage rate is levied on each Member States' GNI, which is established in accordance with Community rules.

National accounts also assist in the calculation of the correction applied for the United Kingdom's contribution. The financing of the reimbursement by the other Member States is calculated on the basis of each country's share in the EU's total gross national income, with upper thresholds applied for some Member States.

Other international organisations

As well as being used to determine budgetary contributions within the EU, national accounts data are also used to determine contributions to other international organisations, such as the United Nations. Contributions to the United Nations' budget are based on gross national income along with a variety of adjustments and limits ([9]).

2.4 Analysts and forecasters

National accounts are also widely used by analysts and researchers to examine the economic situation and developments. Financial institutions' interest in national accounts may range from a broad analysis of the economy to specific information concerning savings, investment or debt among households, non-financial corporations or other institutional sectors. Social partners, such as representatives of businesses (for example, trade associations) or representatives of workers (for example, trade unions), also have an interest in national accounts for the purpose of analysing developments that affect industrial relations. Among other uses, researchers and analysts use national accounts for business cycle analysis and analysing long-term economic cycles and relating these to economic, political or technological developments.

([9]) Resolution adopted by the General Assembly 61/237.

3. The impact of the economic and financial crisis

Following the description of the various types of national accounts as well as their main uses and users, this section aims to demonstrate how national accounts data and related indicators can be used to monitor and analyse the recent evolution of the business cycle –for example, focussing on the economic and financial crisis.

This section starts with a presentation of the main GDP aggregate, before an analysis of external trade, output, income, consumption and investment, as well as developments for savings and wealth (from the sector accounts). The remaining analysis looks at a range of other economic indicators, such as economic sentiment, inflation and unemployment, in relation to the development of GDP. The indicators presented focus on economic developments over a period of close to ten years and, more specifically, on the impact of the financial and economic crisis (as shown by the most recent data available at the time of writing). This section concludes with a point in relation to statistical implications of the financial and economic crisis.

3.1 The impact of the recession – as measured by national accounts aggregates

As noted in the previous section, national accounts provide a tool for business cycle analysis. The indicators that are presented in this section show the considerable impact of the economic and financial crisis. Focussing mainly on aggregated data for the EU-27 economy, but presenting also some snapshots in relation to the most recent situation observed in the Member States, the data presented in this section drawn from national accounts illustrate how the economic and financial crisis has impacted upon various sectors of the economy. Whereas this section focuses on quarterly data, which is more suited to an analysis of the business cycle, further analysis based on annual data from national accounts may be found in Chapter 1: more specifically, Subchapter 1.1 presents an analysis of GDP and its main components, while Subchapter 1.2 presents Government finance statistics.

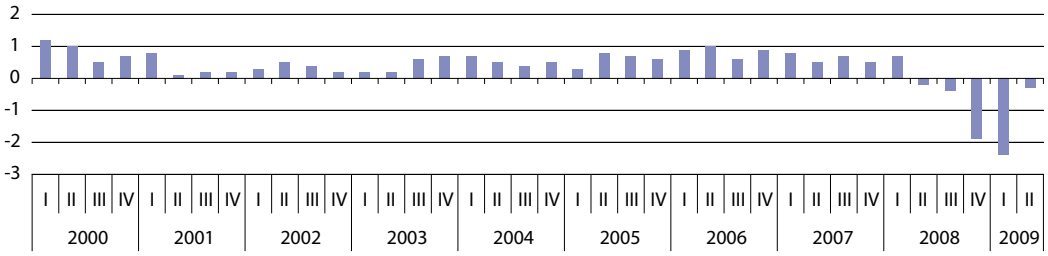
GDP growth

Taking a medium-term perspective, Figure 7 shows quarter on quarter changes in GDP since 2000 for the EU-27. While positive growth rates were recorded each and every quarter until the middle of 2008, the negative growth rates in the final quarter of 2008 and the first quarter of 2009 were greater in magnitude than any of the growth rates recorded in earlier years, underlying the severity of the recession. In fact these were the first negative rates of change since the series began in 1995 and it is widely acknowledged that this is the worst global recession since the 1930's. The most recent rates of change available show that the strength of the recession weakened during 2009 and estimates for the third quarter of 2009 show a return to growth in the EU-27 as a whole.

However, the economic downturn was not homogeneous across the EU. Looking at the changes in GDP volumes compared with one year earlier, Figure 8 shows the

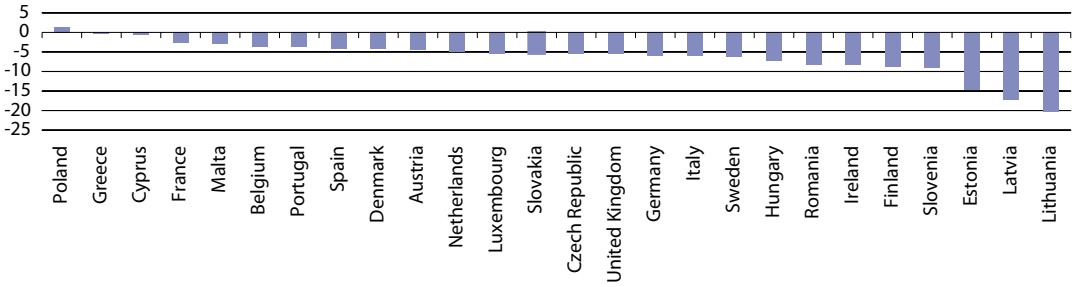
great diversity in the intensity of the economic downturn between Member States: while the Baltic Member States all experienced particularly strong negative rates of change, Poland still continued to record economic growth.

Figure 7: GDP, change on previous quarter, EU-27
(%)



Source: Eurostat (namq_gdp_k)

Figure 8: GDP, change on same quarter of previous year, second quarter 2009 (1)
(%)



(1) Bulgaria, not available; Denmark, Estonia, Ireland and Luxembourg, first quarter 2009.

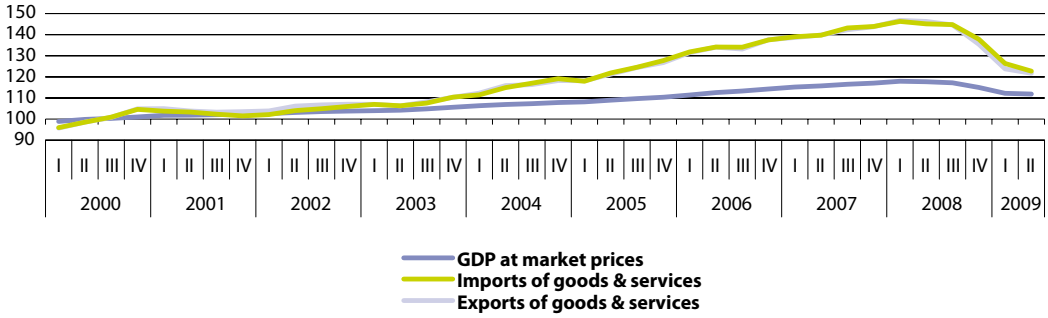
Source: Eurostat (namq_gdp_k)

External trade

The global dimension of the economic crisis is clearly demonstrated by the evolution of external trade. Figure 9 illustrates that external trade in goods and services grew faster than GDP in the EU-27 from 2002 to the beginning of 2008. From this date, reductions in levels of external trade were more pronounced than the contraction in GDP. Furthermore, the level of GDP appeared to be stabilising in the middle of 2009, whereas external trade flows were still falling, albeit at a slower rate than in the second half of 2008.

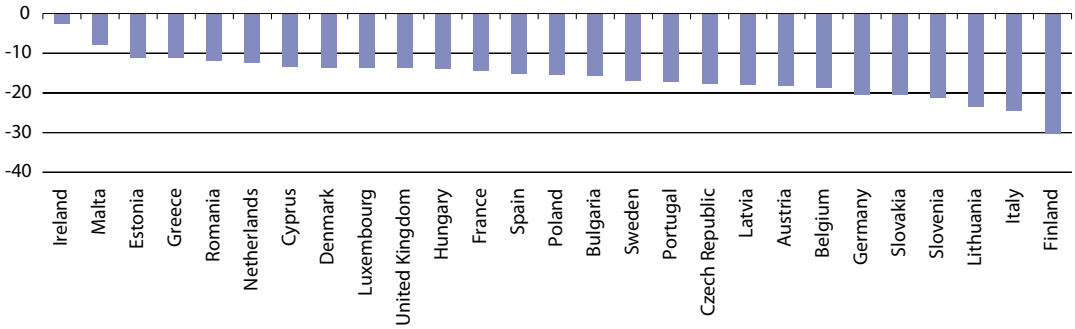
Figures 10 and 11 show that the relative importance of imports and exports varies significantly across countries, and that the drop in imports was generally slightly more significant than the drop experienced for exports during the second quarter of 2009.

Figure 9: Indices of GDP and external trade, EU-27 (2000=100)



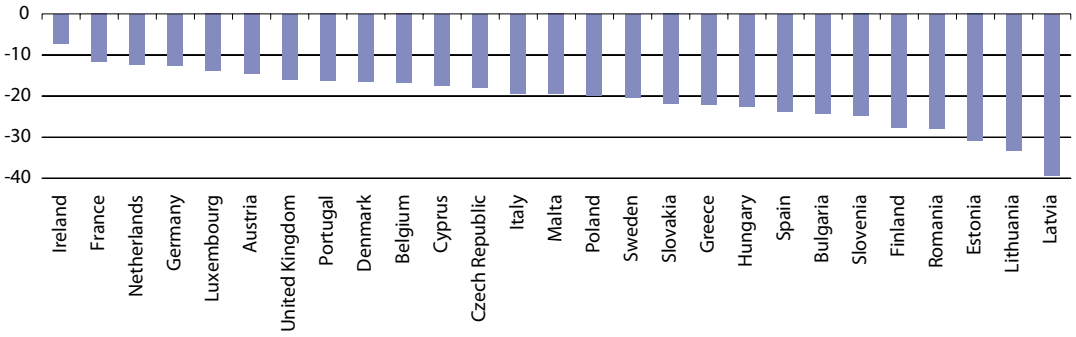
Source: Eurostat (namq_gdp_k)

Figure 10: Exports, change on same period of previous year, second quarter 2009 (%)



Source: Eurostat (namq_gdp_k)

Figure 11: Imports, change on same period of previous year, second quarter 2009 (%)



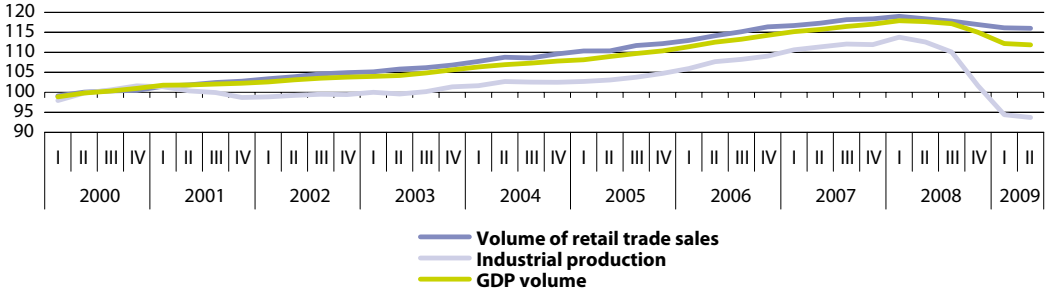
Source: Eurostat (namq_gdp_k)

Production, consumption and investment

The contraction in international trade may be cited as one of the main reasons for falling demand within the global economy. Industrial output in the EU-27 dropped sharply from the beginning of 2008. Figure 12 shows that the decline in industrial output was also much sharper than that recorded for GDP (industrial output fell by around 18 % overall from the first quarter of 2008 to the second quarter of 2009). The decline in retail sales was more modest, but in both cases, there were again significant variations across Member States (see Figures 13 and 14).

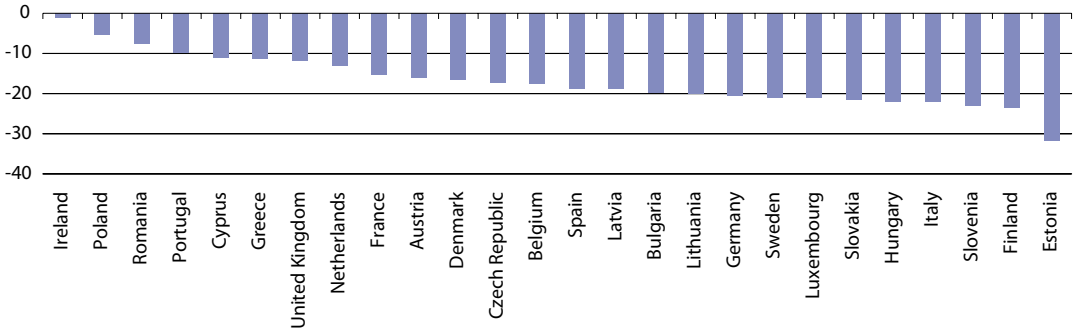
An analysis of expenditure (see Figure 15) confirms that the decline in final consumption expenditure (mainly of households and government) was relatively modest in comparison, but investment (shown as gross fixed capital formation) declined at a particularly rapid pace across the EU during the recession.

Figure 12: Indices of GDP and industrial and retail trade output, EU-27 (2000=100)



Source: Eurostat (sts_inpr_q, sts_trtu_q and namq_gdp_k)

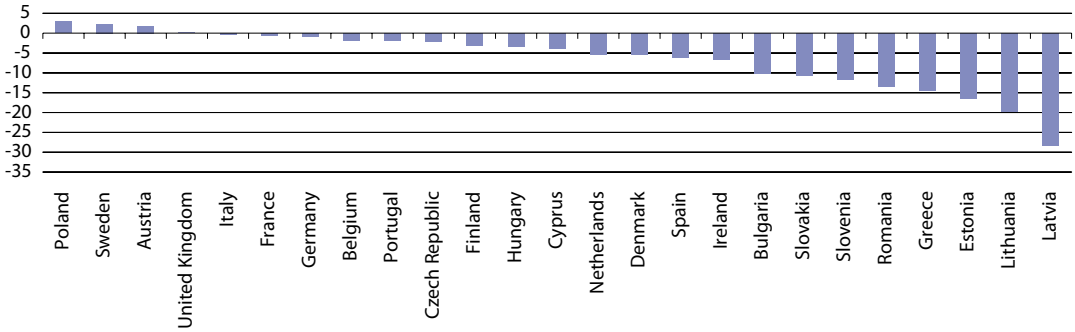
Figure 13: Industrial production, change on same period of previous year, second quarter 2009 ([1])
(%)



([1]) Belgium and Bulgaria, estimates; the Czech Republic, Greece, Cyprus, the Netherlands and Slovenia, provisional.

Source: Eurostat (sts_inprgr_q)

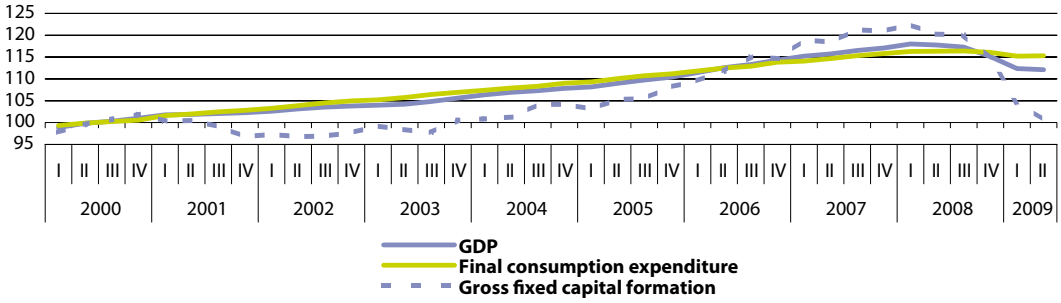
Figure 14: Retail trade volume of sales, change on same period of previous year, second quarter 2009 ([1])
(%)



([1]) Luxembourg and Malta, not available; Spain, Italy, Cyprus and the Netherlands, estimates; Belgium, the Czech Republic, Germany and Austria, provisional.

Source: Eurostat (sts_trtugr_q)

Figure 15: Indices of GDP, consumption and investment, EU-27 (2000=100)



Source: Eurostat (namq_gdp_k)

3.2 The impact of the recession – as measured by European sector accounts

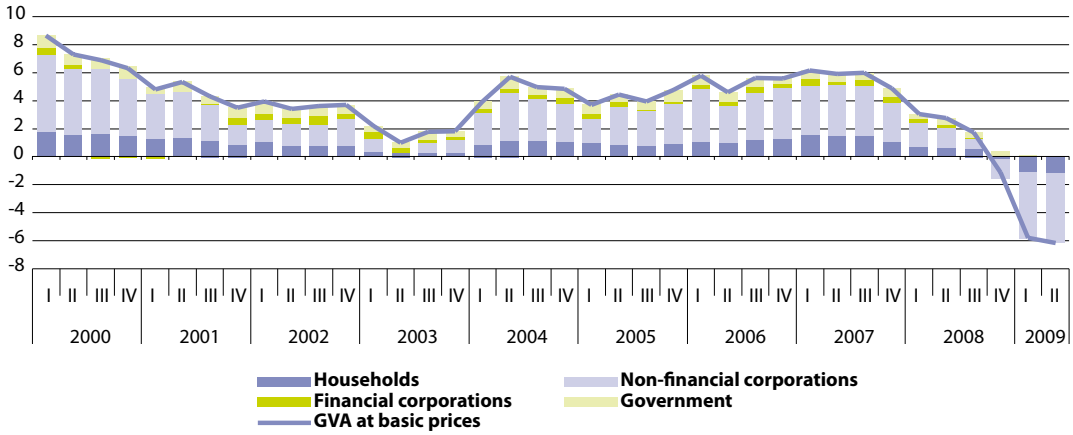
More detailed insights on trends affecting different types of economic agents during the recession can be gained from the sector accounts. Figures 16 to 18 indicate the contribution of the institutional sectors to changes in value added, capital formation, and lending/borrowing. Non-financial corporations generally deliver the largest contribution to value added (and GDP) growth, but their contribution is quite volatile. The contribution of households normally fluctuates less, partly because of the stabilising influence of the imputed rent on owner-occupied dwellings. Nevertheless, during recession in 2008/2009 the contribution of households to value added growth fell, and in fact turned negative from the final quarter of 2008.

Gross capital formation includes principally investment in fixed assets (buildings, machinery) but also changes in inventories. The overall growth of gross capital formation is mainly driven by developments in the non-financial corporations sector and, to a lesser extent, by households (dwellings). Gross capital formation is relatively volatile in all sectors, and during the recession in 2008/2009 households and non-financial corporations recorded negative rates of change for this indicator.

The difference between savings plus net capital transfers, on the one hand, and gross capital formation, on the other hand, is net lending if positive or net borrowing if negative. During the period shown in Figure 18 the EU-27 has been a net borrower from the rest of the world, and the extent of this borrowing increased from the beginning of 2005. Over the period shown, households were net lenders as were financial corporations in most quarters (note that the figure in fact shows cumulated values for four quarters), while non-financial corporations were net borrowers, as were governments most quarters. The increase in net borrowing

during the recession in 2008/2009 results in large part from particularly strong growth in government net borrowing. The remainder of this section reviews developments in the corporate, household or government sectors, focussing mainly on wealth effects.

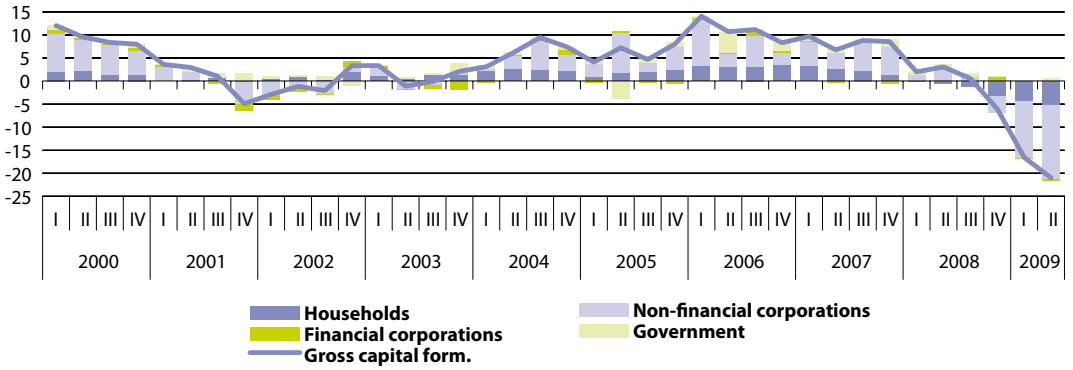
Figure 16: Growth of gross value added (GVA) by sector, EU-27 (1)
(%)



(1) Annual percentage change.

Source: Eurostat (nasq_sector)

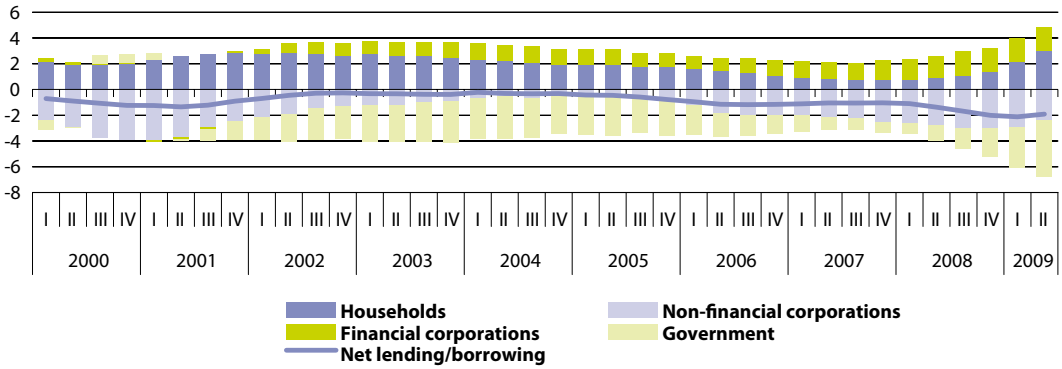
Figure 17: Growth of gross capital formation by sector, EU-27 (1)
(%)



(1) Annual percentage change.

Source: Eurostat (nasq_sector)

Figure 18: Net lending (+)/net borrowing (-) by sector, EU-27 (1)
(%)



(1) Percentage of GDP, based on four-quarter-cumulated sums.

Source: Eurostat (nasq_sector) and European Central Bank (ECB)

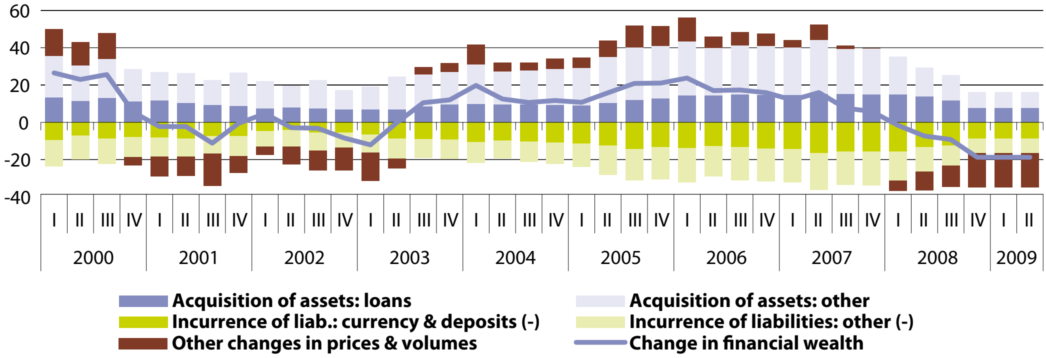
Corporations

The net financial wealth of corporations is the ultimate property of the owners/shareholders of corporations, mainly households. As such it is useful to analyse this before accounting for shares and other equity on the liabilities side. Figures 19 and 20 show the rate of change of net financial wealth adjusted in this way for financial and non-financial corporations, along with the changes in the main components. As for household financial wealth (see below), in recent periods other changes in prices and volumes have moved from positive to negative rates of change.

Figure 21 analyses the net financial wealth of non-financial corporations both on the assets and liabilities side, and confirms that the main movement in net financial wealth was changes in the value of shares and other equity.

Whereas for households the investment rate is expressed relative to disposable income, for non-financial corporations it is expressed relative to value added. Figure 22 indicates how the investment rate in the EU-27 increased between 2004 and the middle of 2008 as the growth of gross fixed capital formation outstripped that of value added. This situation was subsequently reversed with relatively large negative rates of change recorded for gross fixed capital formation from the final quarter of 2008.

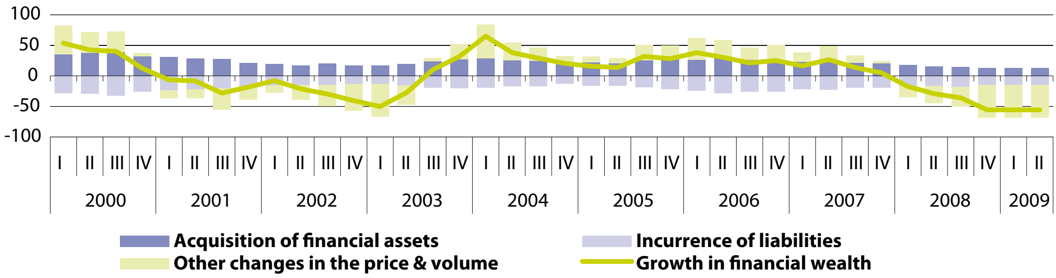
Figure 19: Financial corporations, annual rates of change in financial assets, liabilities and wealth, euro area (1)
(%)



(1) Excludes shares and other equity liabilities; acquisitions, liabilities and change in wealth are all presented net.

Source: European Central Bank (ECB)

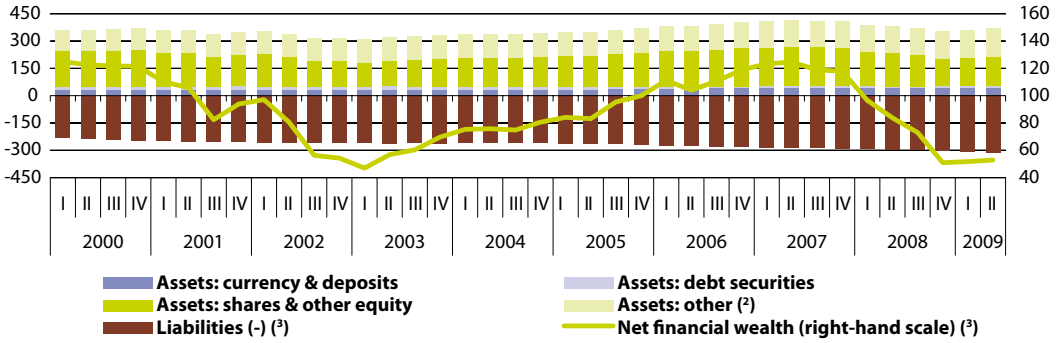
Figure 20: Non-financial corporations, annual rates of change in financial assets, liabilities and wealth, euro area (1)
(%)



(1) Except shares and other equity liabilities; acquisitions, liabilities and change in wealth are all presented net.

Source: European Central Bank (ECB)

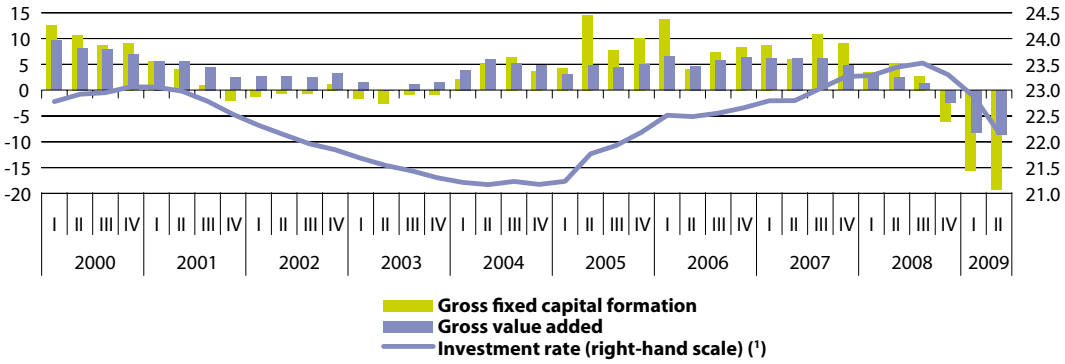
Figure 21: Non-financial corporations, stock of financial assets, liabilities and wealth, euro area (1)
(%)



(1) Percentage of net value added, based on four-quarter-cumulated sums.
(2) Insurance technical reserves, financial derivatives, loans granted and other accounts receivable.
(3) Except shares and other equity liabilities.

Source: European Central Bank (ECB)

Figure 22: Non-financial corporations, investment rate and annual rate of change in gross fixed capital formation and value added, EU-27
(%)



(1) Percentage of gross value added, based on four-quarter-cumulated sums.

Source: Eurostat (nasq_sector)

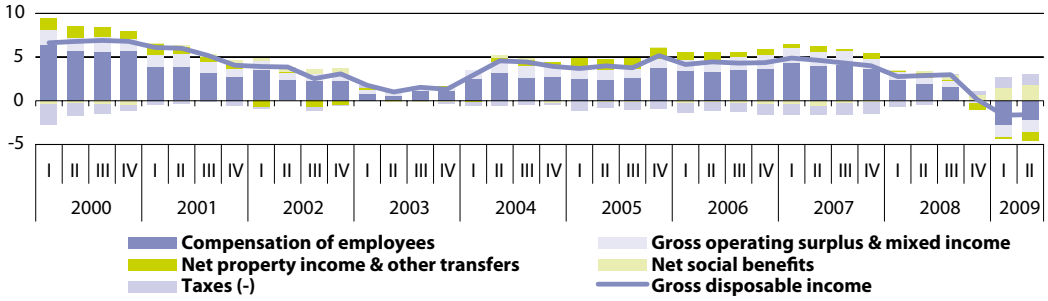
Households

The main contribution to households' income growth is provided by the compensation of employees, while operating surplus and mixed income (which accrues to self-employed households and home owners) generally has the next highest contribution. Both of these sources recorded negative rates of change during the recession, most notably in the first two quarters of 2009. Net property income (interest received minus interest paid, dividends, etc) and net social benefits are normally the most volatile components; the latter is also affected by the position in the business cycle and its growth was particularly large in the first two quarters of 2009.

If households' gross disposable income increases faster than their consumption the household saving rate increases, and this has been observed in the EU-27 since the middle of 2008 – see Figure 24 – with consumption expenditure actually falling in the final quarter of 2008 and the first half of 2009. The saving rate is a key indicator for the household sector: short-term increases in the household saving rate are often linked with pessimistic expectations about the economic future, while longer term variations are generally driven by changes in the labour market or interest rates movements. Household savings (and also borrowing) may be used to finance investment in fixed assets (see Figure 25). When households' gross disposable income grows slower than their investment in fixed assets (principally dwellings) the investment rate increases: this occurred between 2003 and 2007 in the EU-27, with the reverse situation in 2008 and the first half of 2009. Figure 26 summarises the development of the rate of change of households' savings and investment within the EU-27, with the level of saving increasing significantly accompanied by a fall in investment in the most recent quarters.

The households sector has the greatest wealth of all sectors, composed of residential property as well as other non-financial and financial assets. Focusing on financial wealth, changes in the net financial wealth of households are influenced to some extent by their net acquisitions of financial assets and their net incurrence of liabilities, for example, loans for property purchases. Furthermore, changes in the price of households' financial assets (notably changes in share prices) play an important part in the overall change in net financial wealth: in the euro area this net financial wealth fell throughout 2008 and the first half of 2009 (see Figure 27), driven by falls in the value of their assets. Figure 28 shows the composition of households' net financial wealth, and how in particular falling values of shares and other equity reduced household wealth in 2008 and 2009.

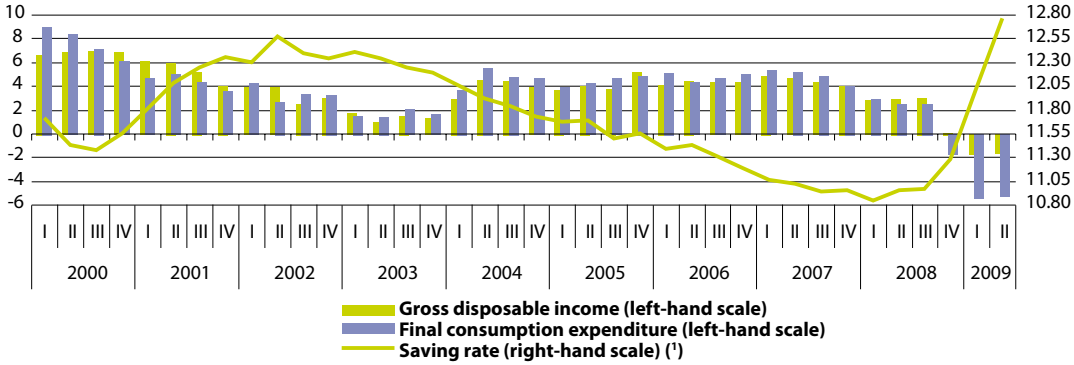
Figure 23: Households, growth of gross disposable income by component, EU-27 (1)
(%)



(1) Annual percentage change.

Source: Eurostat (nasq_sector)

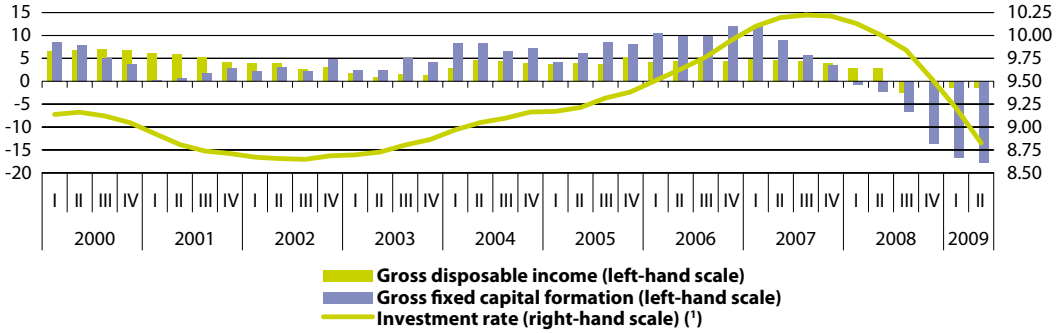
Figure 24: Households, saving rate and the annual rate of change of income and consumption, EU-27
(%)



(1) Percentage of gross disposable income including net adjustment for the change in net equity of households in pension funds reserves, based on four-quarter-cumulated sums.

Source: Eurostat (nasq_sector)

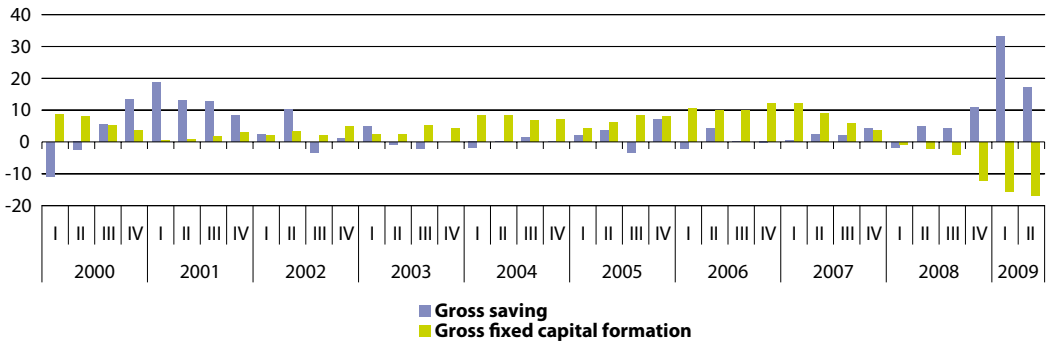
Figure 25: Households, investment rate and the annual rate of change of income and capital formation, EU-27
(%)



(1) Percentage of gross disposable income including net adjustment for the change in net equity of households in pension funds reserves, based on four-quarter-cumulated sums.

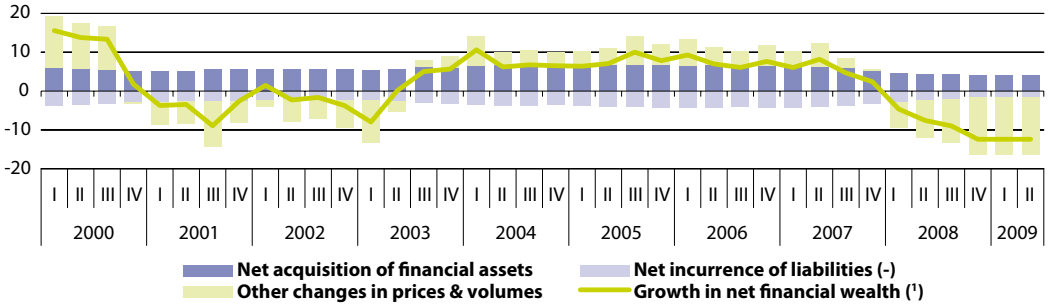
Source: Eurostat (nasq_sector)

Figure 26: Households, saving and investment, change on same period of previous year, EU-27
(%)



Source: Eurostat (nasq_sector)

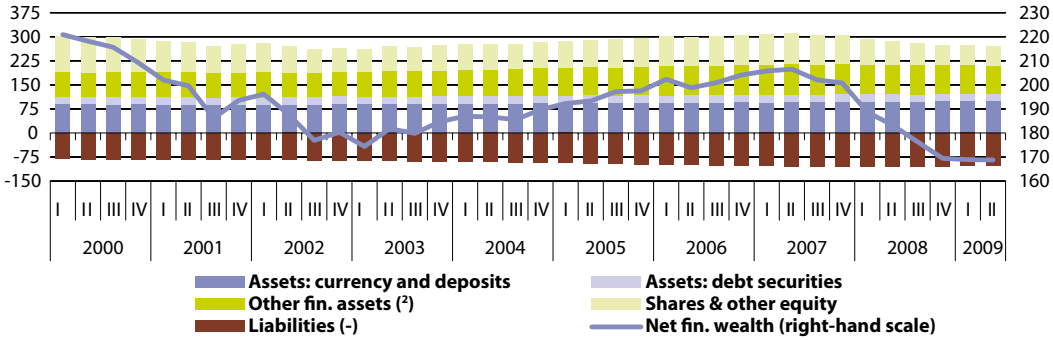
Figure 27: Households, change in financial assets, liabilities and net financial wealth, euro area (%)



(1) Annual rate of change.

Source: European Central Bank (ECB)

Figure 28: Households, financial assets, liabilities and net financial wealth, euro area (1) (%)



(1) Percentage of gross disposable income, including net adjustment for the change in net equity of households in pension funds reserves, based on four-quarter-cumulated sums.
(2) Insurance technical reserves, financial derivatives, loans granted and other accounts receivable.

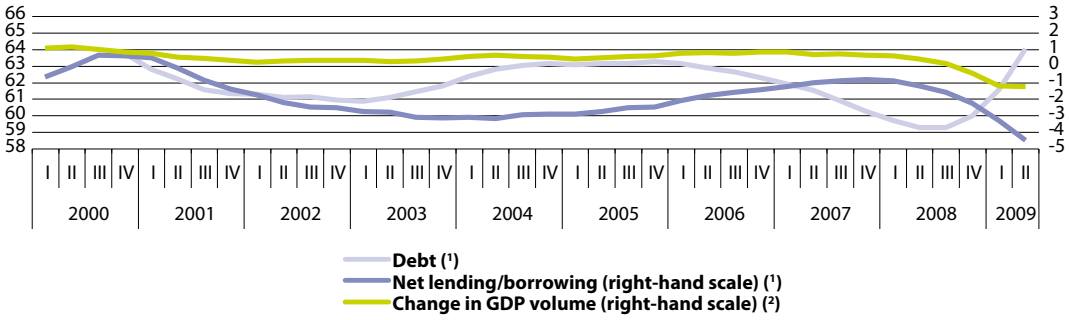
Source: European Central Bank (ECB)

Governments

Government borrowing and debt within the EU-27 increased strongly during 2008 and the beginning of 2009 as governments responded to the economic and financial crisis – see Figure 29. Figure 30 presents the development of net lending/borrowing (right axis) as well as an analysis of the main categories of receipts and payments of the government sector (left axis). The receipt side records taxes less subsidies on production and current taxes on income and wealth. The payment side records notably compensation paid to government employees and social contributions less benefits that account for the surplus/deficit of the social security system (including public pension schemes). During 2008 and 2009 net borrowing by governments in the EU-27 increased, largely because net revenue from production taxes less subsidies fell and net payments for social security increased along with other payments. Figure 31 shows the separate figures for contributions receivable and benefits payable from social security systems: as a share of GDP both of these increased during 2008 and 2009, with benefits payable growing faster. Figure 32 provides a similar analysis for taxes on production and imports and subsidies: despite falling GDP, taxes on production and imports as a share of GDP fell from 2007, while subsidies were relatively stable.

The net financial wealth of governments in the euro area is shown in Figure 33, along with an analysis of assets and liabilities. The increase in the negative net wealth seen in the last quarter of 2008 was mainly due to a large increase in debt.

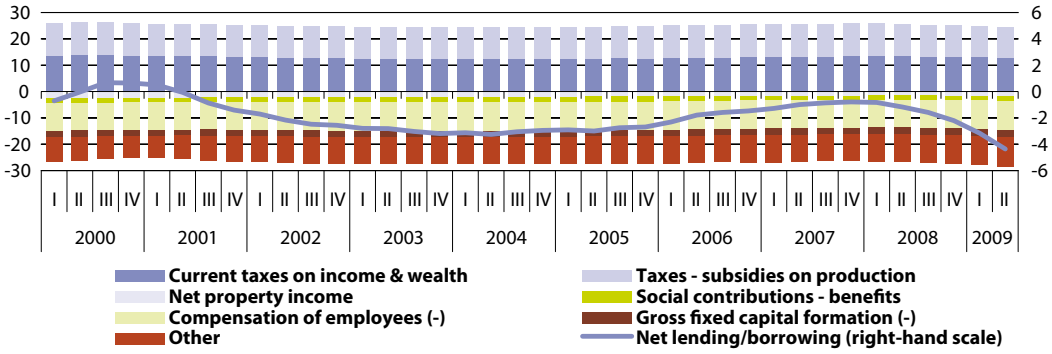
Figure 29: Government debt and deficit as a percentage of GDP, EU-27
(%)



(1) Percentage of GDP, based on four quarters average.
(2) Change on previous quarter (seasonally adjusted).

Source: Eurostat (gov_q_ggnfa, gov_q_ggdebt and namq_gdp_k)

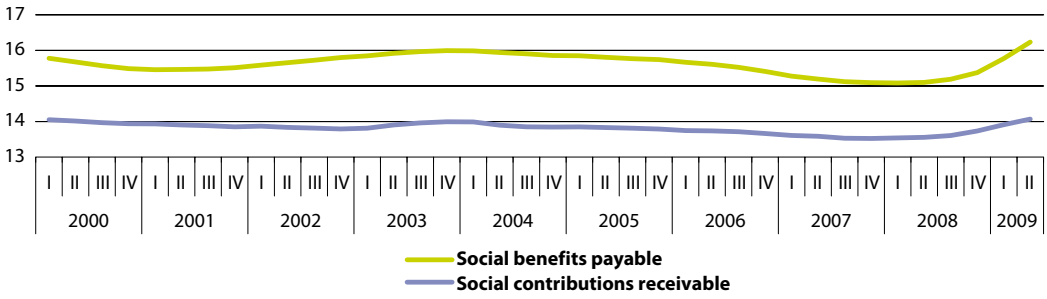
Figure 30: Government, income and expenditure components, EU-27 (1)
(%)



(1) Percentage of GDP, based on four quarters cumulated sums.

Source: Eurostat (nasq_sector) and European Central Bank (ECB)

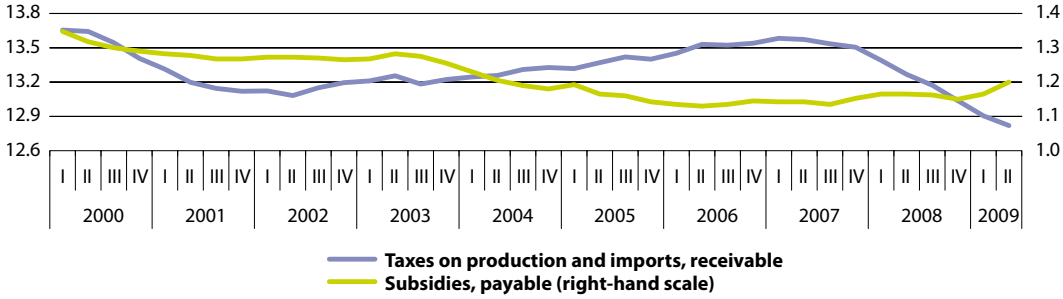
Figure 31: Government, social contributions and benefits, EU-27 (1)
(%)



(1) Percentage of GDP, based on four quarters cumulated sums.

Source: Eurostat (gov_q_ggnfa)

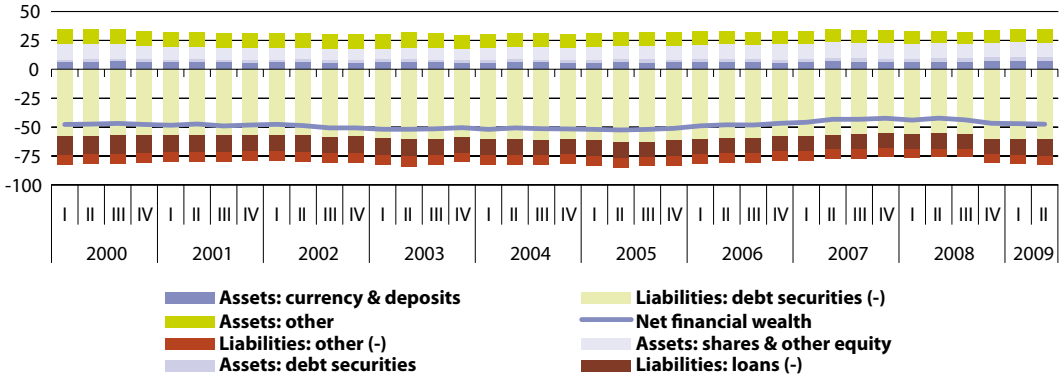
Figure 32: Government, taxes and subsidies, EU-27 (1)
(%)



(1) Percentage of GDP, based on four quarters cumulated averages.

Source: Eurostat (gov_q_ggnfa)

Figure 33: Government, stock of financial assets, liabilities and net financial wealth, euro area (1)
(%)



(1) Percentage of GDP, based on four quarters cumulated sums.

Source: European Central Bank (ECB)

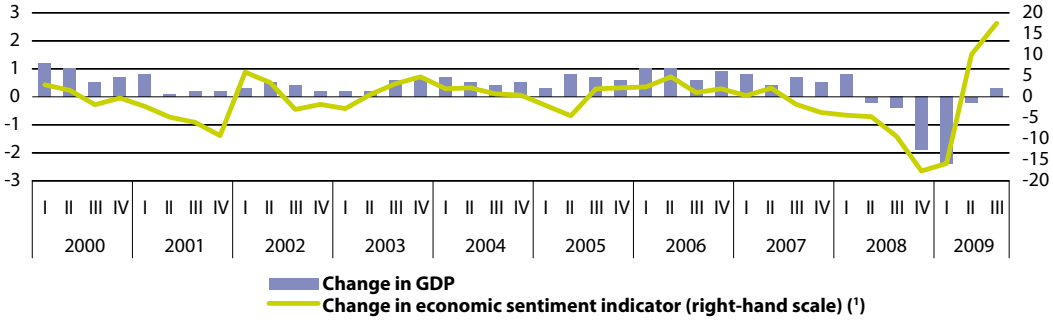
3.3 The impact of the recession – as measured by other macro-economic indicators

National accounts indicators are often used to complete the overall picture described by other short-term indicators and, being usually at the end of the statistical process, national accounts statistics can often give greater detail, as well as a coherent and integrated structure to the signals provided by other macro-economic indicators (such as economic and business sentiment indicators, inflation, employment/unemployment). Information relating to annual statistics is provided for many of these indicators later in this publication: for example, Subchapters 1.3, 1.4 and 1.5 present interest rates, consumer prices and balance of payment statistics; Subchapters 5.1 and 5.2 present statistics on employment and unemployment.

Economic sentiment

The economic sentiment indicator (ESI) is an important indicator to anticipate changes in the economic business cycle. The European Commission's Directorate-General for Economic and Financial Affairs (DG ECFIN) conducts regular harmonised surveys for different sectors of the economy in the Member States. The ESI is compiled as a weighted average of five confidence indicators concerning industry, construction, retail trade, services, and consumers. Figure 34 shows how the ESI started its most recent fall in 2007, earlier than GDP, while growing confidence returned in the second quarter of 2009.

Figure 34: GDP and the economic sentiment indicator, EU-27
(%)



(1) The monthly economic sentiment indicator has been averaged to a quarterly index.

Source: European Commission, Directorate-General for Economic and Financial Affairs

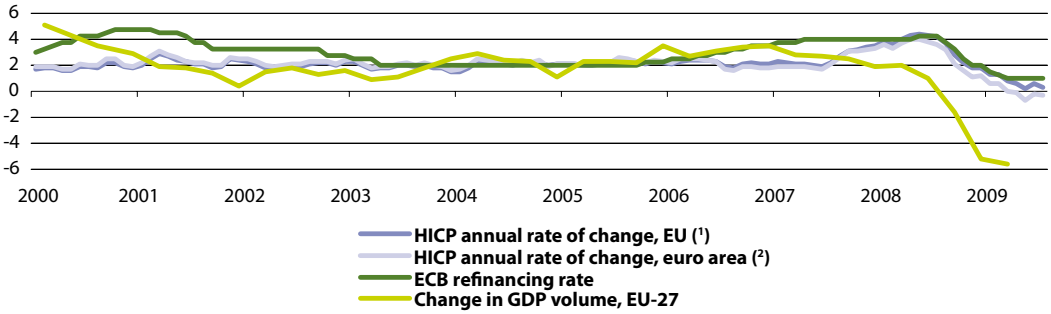
Inflation

Inflation is another timely indicator on the state of the economic business cycle, as changes in the balance between demand and supply for consumer goods and services are typically reflected in the evolution of prices. Within the EU, inflation is measured by the harmonised index of consumer prices (HICP), which is calculated according to a harmonised approach and a single set of definitions that result in a comparable measure of inflation across the euro area, the EU, the EEA, as well as other non-member countries (including candidate countries). These statistics provide the official measure of consumer price inflation in the euro area for the purposes of monetary policy and assessing inflation convergence (as required under the Maastricht criteria).

In this respect, it is interesting that Figure 35 shows a relatively long period of stable price inflation and unchanged ECB refinancing rates between 2003 and the beginning of 2006. Subsequently, interest rates in the euro area broadly doubled in relation to monetary tightening, while the harmonised index of consumer prices rose significantly in 2007 and 2008 in part due to increased oil prices and also food prices. As the financial and economic crisis resulted in a sharp economic contraction, the ECB proceeded with significant cuts in the refinancing rate and HICP inflation fell from broadly 4 % to nearly zero within a year. By the summer of 2009 the HICP stabilised at a relatively low rate of change and the ECB's refinancing rate was also kept stable at 1 %.

Comparing the respective rates of HICP inflation between September 2008 and 2009, Figure 36 and Table 4 show that inflation varied significantly across the EU Member States, but that all countries experienced a significant drop in their inflation rates. The decline was most noteworthy for the Baltic countries and Bulgaria where inflation had reached double-digits in September 2008. One year later, several EU Member States, notably Ireland, Portugal and Estonia recorded negative inflation rates, while the annual rate of change was almost unchanged in Poland.

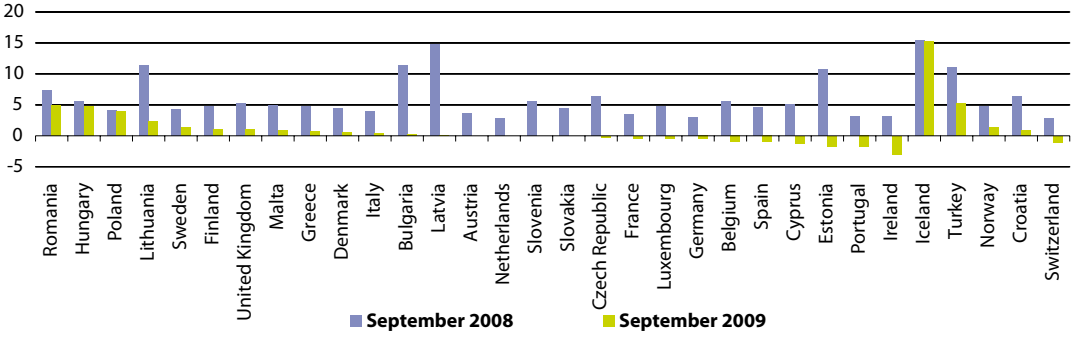
Figure 35: Inflation, interest rates and quarterly GDP
(%)



(1) The data refer to the official EU aggregate, its country coverage changes in line with the addition of new EU Member States and integrates them using a chain index formula.
(2) The data refer to the official euro area aggregate, its country coverage changes in line with the addition of new EA Member States and integrates them using a chain index formula.

Source: Eurostat (prc_hicp_manr, irt_cb_m and namq_gdp_k)

Figure 36: HICP, annual rate of change
(%)



Source: Eurostat (prc_hicp_manr)

Table 4: HICP, annual rate of change
(%)

	2008			2009								
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
EU (1)	3.7	2.8	2.2	1.8	1.8	1.3	1.3	0.8	0.6	0.2	0.6	0.3
Euro area (2)	3.2	2.1	1.6	1.1	1.2	0.6	0.6	0.0	-0.1	-0.7	-0.2	-0.3
Belgium	4.8	3.2	2.7	2.1	1.9	0.6	0.7	-0.2	-1.0	-1.7	-0.7	-1.0
Bulgaria	11.2	8.8	7.2	6.0	5.4	4.0	3.8	3.0	2.6	1.0	1.3	0.2
Czech Republic	5.7	4.1	3.3	1.4	1.3	1.7	1.3	0.9	0.8	-0.1	0.0	-0.3
Denmark	3.8	2.8	2.4	1.7	1.7	1.6	1.1	1.1	0.9	0.7	0.7	0.5
Germany	2.5	1.4	1.1	0.9	1.0	0.4	0.8	0.0	0.0	-0.7	-0.1	-0.5
Estonia	10.1	8.5	7.5	4.7	3.9	2.5	0.9	0.3	-0.5	-0.4	-0.7	-1.7
Ireland	2.7	2.1	1.3	1.1	0.1	-0.7	-0.7	-1.7	-2.2	-2.6	-2.4	-3.0
Greece	4.0	3.0	2.2	2.0	1.8	1.5	1.1	0.7	0.7	0.7	1.0	0.7
Spain	3.6	2.4	1.5	0.8	0.7	-0.1	-0.2	-0.9	-1.0	-1.4	-0.8	-1.0
France	3.0	1.9	1.2	0.8	1.0	0.4	0.1	-0.3	-0.6	-0.8	-0.2	-0.4
Italy	3.6	2.7	2.4	1.4	1.5	1.1	1.2	0.8	0.6	-0.1	0.1	0.4
Cyprus	4.8	3.1	1.8	0.9	0.6	0.9	0.6	0.5	0.1	-0.8	-0.9	-1.2
Latvia	13.7	11.6	10.4	9.7	9.4	7.9	5.9	4.4	3.1	2.1	1.5	0.1
Lithuania	10.7	9.2	8.5	9.5	8.5	7.4	5.9	4.9	3.9	2.6	2.2	2.3
Luxembourg	3.9	2.0	0.7	0.0	0.7	-0.3	-0.3	-0.9	-1.0	-1.5	-0.2	-0.4
Hungary	5.1	4.1	3.4	2.4	2.9	2.8	3.2	3.8	3.7	4.9	5.0	4.8
Malta	5.7	4.9	5.0	3.1	3.5	3.9	4.0	3.4	2.8	0.8	1.0	0.8
Netherlands	2.5	1.9	1.7	1.7	1.9	1.8	1.8	1.5	1.4	-0.1	-0.1	0.0
Austria	3.0	2.3	1.5	1.2	1.4	0.6	0.5	0.1	-0.3	-0.4	0.2	0.0
Poland	4.0	3.6	3.3	3.2	3.6	4.0	4.3	4.2	4.2	4.5	4.3	4.0
Portugal	2.5	1.4	0.8	0.1	0.1	-0.6	-0.6	-1.2	-1.6	-1.4	-1.2	-1.8
Romania	7.4	6.8	6.4	6.8	6.9	6.7	6.5	5.9	5.9	5.0	4.9	4.9
Slovenia	4.8	2.9	1.8	1.4	2.1	1.6	1.1	0.5	0.2	-0.6	0.1	0.0
Slovakia	4.2	3.9	3.5	2.7	2.4	1.8	1.4	1.1	0.7	0.6	0.5	0.0
Finland	4.4	3.5	3.4	2.5	2.7	2.0	2.1	1.5	1.6	1.2	1.3	1.1
Sweden	3.4	2.4	2.1	2.0	2.2	1.9	1.8	1.7	1.6	1.8	1.9	1.4
United Kingdom	4.5	4.1	3.1	3.0	3.2	2.9	2.3	2.2	1.8	1.8	1.6	1.1
Croatia	5.7	4.5	2.8	3.2	3.8	3.4	3.5	2.5	1.9	1.2	1.5	0.9
Turkey	12.0	10.8	10.1	9.5	7.7	7.9	6.1	5.2	5.7	5.4	5.3	5.3
Iceland	17.9	19.8	21.0	21.9	21.6	19.9	16.3	15.7	16.7	16.5	16.0	15.3
Norway	5.1	3.3	2.6	2.6	2.8	2.6	2.9	2.9	3.5	2.2	1.8	1.4
Switzerland	2.6	1.2	0.3	-0.1	-0.1	-0.7	-0.6	-1.1	-1.2	-1.4	-1.0	-1.1

(1) The data refer to the official EU aggregate, its country coverage changes in line with the addition of new EU Member States and integrates them using a chain index formula.
(2) The data refer to the official euro area aggregate, its country coverage changes in line with the addition of new EA Member States and integrates them using a chain index formula.

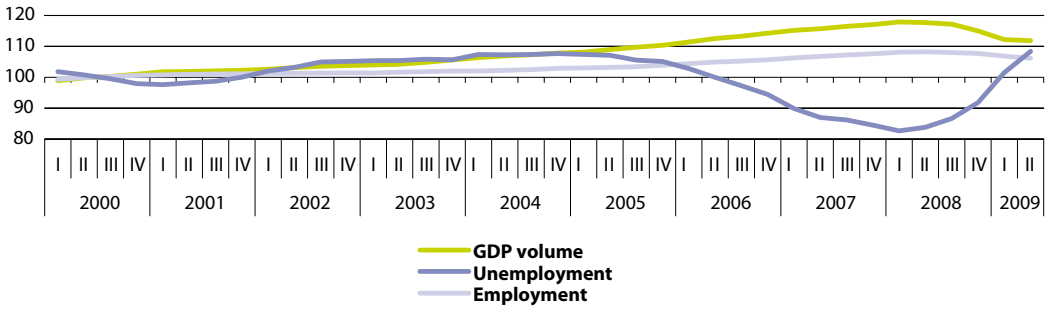
Source: Eurostat (prc_hicp_manr)

Employment and unemployment

Employment figures typically lag many of the other indicators that are used for business cycle analysis, as an economic expansion or downturn usually takes some time to pass through into the labour market. Figure 37 illustrates that employment in the EU-27 only started to decline in the second half of 2008, whereas the EU-27 unemployment rate reached a low point at the beginning of 2008 (the same period when quarterly GDP in volume terms peaked). The number of unemployed persons rose strongly during 2008 and 2009: at the time of writing the latest data (January 2010) shows that the unemployment rate continues to increase, alongside slowly growing quarterly GDP.

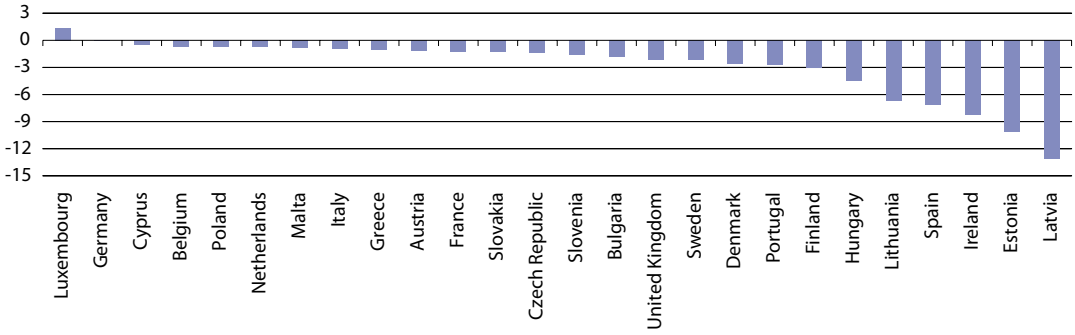
Figures 38 and 39, as well as Table 5 give a detailed picture of how the situation varies across Member States. They clearly show that the labour market has been most severely affected in the Baltic countries, Spain and Ireland, while the increase in unemployment between the second quarter of 2008 and 2009 was relatively modest in a number of Member States, most notably Germany (where increased use was made of short-time work in order to reduce the number of redundancies).

Figure 37: Indices of GDP, employment and unemployment, EU-27 (2000=100)



Source: Eurostat (namq_gdp_k, lfsi_grt_q and une_nb_q)

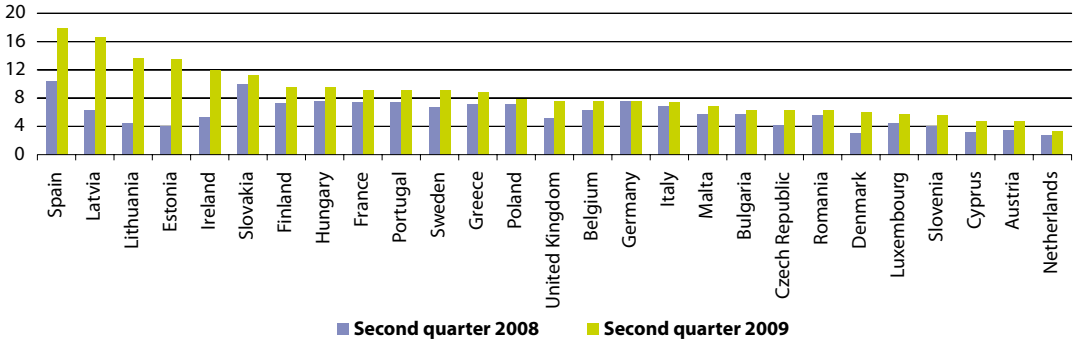
Figure 38: Employment, change on same period of previous year, second quarter 2009 ([1])
(%)



([1]) Romania, not available.

Source: Eurostat (lfsi_grt_q)

Figure 39: Unemployment rate
(% of the labour force)



Source: Eurostat (une_rt_q)

Table 5: Unemployment rate, seasonally adjusted
(% of the labour force)

	2006	2007				2008				2009		
	IV	I	II	III	IV	I	II	III	IV	I	II	III
EU-27	7.8	7.4	7.2	7.1	6.9	6.7	6.8	7.0	7.5	8.2	8.8	9.1
Euro area	8.0	7.7	7.5	7.4	7.3	7.2	7.4	7.6	8.0	8.8	9.3	9.6
Belgium	8.0	7.8	7.9	7.0	7.1	6.9	6.7	7.4	7.0	7.7	7.7	7.9
Bulgaria	8.4	7.6	7.0	6.8	6.2	6.1	5.9	5.3	5.2	6.0	6.3	7.2
Czech Republic	6.6	5.9	5.4	5.1	4.9	4.5	4.3	4.3	4.5	5.5	6.3	6.9
Denmark	3.7	4.1	3.7	3.9	3.4	3.2	3.1	3.3	3.8	4.7	5.9	6.1
Germany	9.2	8.8	8.5	8.3	8.0	7.6	7.3	7.2	7.1	7.3	7.6	7.6
Estonia	5.5	5.1	5.2	4.3	4.0	4.0	4.1	6.5	7.7	11.0	13.3	:
Ireland	4.3	4.4	4.6	4.6	4.7	4.7	5.3	6.4	7.7	10.3	12.1	12.6
Greece	8.7	8.6	8.4	8.2	8.0	7.8	7.5	7.5	7.9	8.8	9.2	:
Spain	8.3	8.1	8.0	8.4	8.6	9.2	10.5	11.9	14.0	16.5	17.9	18.9
France	9.0	8.8	8.5	8.2	7.9	7.6	7.7	7.9	8.3	8.9	9.4	9.8
Italy	6.5	6.0	5.9	6.2	6.4	6.6	6.8	6.8	6.9	7.4	7.4	:
Cyprus	4.2	4.2	4.0	3.8	3.8	3.7	3.5	3.5	3.7	4.4	5.2	5.6
Latvia	6.2	6.5	5.9	6.2	5.5	6.1	6.2	7.5	10.2	13.2	16.4	18.7
Lithuania	4.9	4.7	4.3	4.1	4.1	4.5	4.8	6.3	8.1	11.0	13.8	:
Luxembourg	4.6	4.4	4.1	4.1	4.2	4.4	4.8	5.1	5.3	5.8	6.3	6.5
Hungary	7.6	7.2	7.1	7.3	7.9	7.6	7.7	7.8	8.1	9.2	9.7	9.6
Malta	6.8	6.7	6.4	6.4	6.2	5.9	5.9	5.9	6.1	6.6	7.1	7.2
Netherlands	3.7	3.5	3.2	3.1	2.9	2.8	2.8	2.7	2.7	2.9	3.2	3.5
Austria	4.5	4.4	4.5	4.6	4.1	4.0	3.5	3.8	4.1	4.4	4.8	4.8
Poland	12.3	10.8	9.8	9.3	8.6	7.6	7.3	6.9	6.9	7.7	8.0	8.1
Portugal	8.2	8.3	8.2	8.1	7.8	7.6	7.6	7.8	8.0	8.8	9.2	9.2
Romania	7.2	6.4	6.6	6.4	6.2	5.7	5.7	5.8	5.9	6.2	6.4	:
Slovenia	5.5	5.3	4.9	4.6	4.7	4.7	4.4	4.3	4.2	4.9	5.8	5.9
Slovakia	12.4	11.4	11.2	11.3	10.7	10.2	9.8	9.1	9.1	10.1	10.9	11.7
Finland	7.4	7.1	6.9	6.9	6.6	6.3	6.2	6.4	6.7	7.4	8.2	8.5
Sweden	6.6	6.4	6.2	6.0	6.0	5.9	6.0	6.3	6.7	7.4	8.1	8.6
United Kingdom	5.5	5.5	5.3	5.3	5.1	5.1	5.3	5.8	6.3	7.0	7.7	:
Croatia	10.4	10.4	9.6	9.3	9.1	8.8	8.3	8.1	8.2	8.6	9.1	9.4
Turkey	8.1	8.2	8.5	8.7	8.8	8.9	9.0	9.9	11.2	12.5	13.2	:
Norway	2.9	2.7	2.5	2.5	2.4	2.4	2.5	2.4	2.8	3.1	3.1	:
Japan	4.0	4.0	3.8	3.8	3.8	3.9	4.0	4.0	4.0	4.5	5.2	:
United States	4.4	4.5	4.5	4.7	4.8	4.9	5.4	6.1	6.9	8.1	9.3	9.6

Source: Eurostat (une_rt_q)

3.4 The impact of the recession – statistical implications of the financial and economic crisis

The financial and economic crisis generated a number of challenges for statisticians. Statisticians working in national statistical institutes, European institutions, and international organisations have been confronted with an increased number of requests from economic actors and policymakers to improve the provision of relevant statistical indicators in a timely and reliable fashion. The worldwide nature of the crisis underlined the global dimension of economic and financial phenomena, the integration of financial markets, and the rapidity of circulation of information. This has resulted in calls for a thorough assessment of the role that official statistics played in the period up to the beginning of the crisis, and the role that statistics will play in the future.

Reactions of the European Statistical System

The reaction of statistical authorities was placed under scrutiny, while the capacity of these authorities to face the challenges of the crisis was also examined. The European Statistical System (ESS) acknowledged such challenges and promptly reacted to meet new and urgent demands both at a national level, an EU level, and at a global level.

The exceptional evolution of the financial markets and its consequences on the real economy required the ESS to deliver a prompt and coherent reaction, addressing in particular the following dimensions:

- statistical consequences on key selected statistical domains with special relevance at a European level for administrative purposes (for example, the appropriate recording of bank and other market rescue operations in the context of public finance);
- prompt availability of key short-term economic indicators for monitoring the impact of the crisis and the impact of measures to offset it;
- international coordination;
- enhanced communication at different levels among users and stakeholders.

The ESS's reaction to the crisis had, therefore, to be multi-faceted and its overall framework for action was fixed around three axes:

- the ESS action plan on the accounting consequences of the financial crisis;
- the regular production of key short-term economic indicators;
- a critical analysis of methodological and practical aspects relating to the statistical production process.

Accounting consequences in the area of public finance

One key aspect of the ESS's reaction has been to ensure the appropriate and proper consideration of the statistical consequences of the financial crisis on key statistics used in the EU for administrative purposes and for the assessment of public finance.

As the financial crisis escalated from late summer 2008, governments and central banks in European countries intervened

through various operations in an effort to restore confidence in the financial system, at first to rescue individual financial institutions in distress, and then through coordinated interventions broadly targeting financial institutions regardless of whether they were in distress or not, recognising the systemic aspect of the situation.

All these operations required an appropriate recording and treatment in statistical terms, notably in the framework of public finance statistics. A key requirement for the ESS in this area was to ensure the consistency across time and across countries of the statistical treatment of public interventions in full respect of the ESA95 rules.

The ESS action plan on the accounting consequences of the financial crisis ([10]) was created and implemented to achieve this target and to support it by strengthening coordination among European statistical authorities, while also enhancing communication with users and stakeholders.

In this sense, the activation of the ESS action plan:

- streamlined the reaction of the ESS to the financial crisis;
- created awareness of the statistical consequences;
- strengthened coordination and communication;
- supported ESS actions to handle the response to the crisis.

The recording and treatment in national accounts of public interventions has clearly been the key methodological topic for official statisticians. In this field, Eurostat, in cooperation with ESS partners, has closely monitored the public interventions and their implications for national accounts data, notably for the government deficit and debt statistics used for the excessive deficit procedure (EDP).

The outcome of this methodological analysis provided the background information for defining the methodological treatment in national accounts, of these types of operations. On 15 July 2009, Eurostat published a decision on 'the statistical recording of public interventions to support financial institutions and financial markets during the financial crisis' ([11]).

International cooperation

In addition, the worldwide nature of the crisis highlighted some limits of official statistics (international comparability, timeliness, and specific indicators in key areas – for example, the housing market). The response of international official statisticians was threefold:

- enhancing the communication of available statistics;
- starting an in-depth analysis to identify the ideal statistical tools for policymakers/analysts/economic operators;
- enhancing the international comparability of key indicators.

Two initiatives are particularly important in this area:

- the work of the inter-agency group on economic and financial statistics – IAG (IMF, BIS, Eurostat, ECB, World Bank, UNSC) on the statistical consequences of the financial and economic crisis;

([10]) http://epp.eurostat.ec.europa.eu/portal/page/portal/financial_turmoil/introduction.

([11]) Eurostat news release 103/2009 - 15 July 2009.

- a set of three international seminars jointly organised by United Nations Statistical Division, Eurostat and some national statistical institutes (NSIs); two of these seminars already took place;

The first of these was an international seminar on timeliness, methodology and comparability of rapid estimates of economic trends jointly organised by Statistics Canada, UNSD and Eurostat, held in Ottawa in May 2009 ([12]) and the second was an international seminar on early warning and business cycle indicators jointly organised by the CBS, UNSD and Eurostat, held in Scheveningen (the Netherlands) in December 2009 ([13]).

Both of these groups focused their efforts on trying to identify which official economic and financial indicators should be regularly produced by national statistical authorities to monitor the evolution of the economy. The Interagency Group set up the 'Principal Global Indicators' website, offering the available indicators regularly collected by international agencies for different countries and in different relevant statistical domains – see Box 3 under Point 4.

The work of all these groups will be used to help prepare answers to the requirements expressed by the G-20 Finance Ministers and Central Bank Governors with respect to statistics in relation to the financial and economic crisis.

4. The future – challenges and constraints in relation to national accounts

One of the enduring challenges for European statistics, including macro-economic statistics, is to maintain or improve quality. The quality of data can be assessed against a number of criteria – for example, accuracy, timeliness or coherence. In recent years improvements have been made in many areas of European statistics concerning several quality criteria, including macro-economic statistics. For example, accessibility has improved through an increase in the availability of data for the EU and the euro area, along with investments that have been made in data dissemination and documentation. Timeliness has also improved through a number of actions, including: greater coordination in the delivery of data by Member States; the development and implementation of estimation methods for late data; shortening of the deadlines for the provision of data; and the development of flash (early) estimates. International comparability has improved through the development and implementation of a growing range of guidelines, rules and recommendations.

Policy developments, changes in the economic phenomena to be observed, and developments in data production techniques result in a dynamic environment for statistics. At the same time, user demands for data grow, notably in terms

([12]) http://unstats.un.org/unsd/nationalaccount/workshops/2009/ottawa/ac188-2.asp.

([13]) http://unstats.un.org/unsd/nationalaccount/workshops/2009/netherlands/ac202-2.asp.

of wanting more data: in relation to its speed of delivery, its frequency of delivery, or its level of detail. Given the long time lag involved to develop or improve statistics, user needs are rarely fully satisfied. As a result there is continuous work to develop, refine and maintain the statistical system. However, increases in user requirements may lead to an increase in the burden on respondents.

Attempts to make improvements in one area may lead to weaknesses in other areas. A major challenge for national accounts, and more widely for short-term macro-economic statistics such as the Principal European Economic Indicators (PEEIs) is to balance the timeliness of data with its level of accuracy and the extent of any subsequent revisions.

Beyond this basic challenge to try to improve simultaneously timeliness and accuracy there are other challenges to face. Whereas within the EU macro-economic analysis of the business cycle has already gone beyond national accounts with the development and refinement of PEEIs, the need for international comparability has led to the expansion of this towards principal global indicators – see Box 3.

Box 3: inter-agency group on economic and financial statistics – G-20 statistical website

The inter-agency group on economic and financial statistics launched a website covering economic and financial data for the group of 20 industrialised and emerging market economies (G-20), at: http://financialdatalink.sharepointsite.net/default.aspx.

The website aims to facilitate the monitoring of economic and financial developments across these countries. It presents data from the participating international agencies for a list of principal global indicators: these indicators cover the financial, government, real and external sectors of the G-20 countries, as well as a host of other macro-economic indicators such as inflation, unemployment and interest rates.

The inter-agency group on economic and financial statistics was created at the end of 2008, and comprises representatives of the Bank for International Settlements, the European Central Bank, Eurostat, the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), the United Nations (UN), and the World Bank. The inter-agency group is chaired by the IMF who hosts the website.

4.1 Globalisation

International comparisons of national accounts have been made for a long time, although the development of international guidelines, rules and recommendations has intensified in recent decades – the first United Nations system of national accounts (SNA) was published in 1958. The international harmonisation of the system of national accounts has developed in parallel to a number of economic and political developments, for example, the single European market and a wider expansion of economic relationships – globalisation. One impact of globalisation has been the increased interest of being able to access comparable measures of economies, with the possibility of making comparisons within the EU, with other developed economies, with rapidly developing nations, and with neighbouring countries that are candidates or prospective candidate countries.

Globalisation can be defined in a relatively narrow way as describing the increasing levels of exchanges between economies, for example, of goods, services, information (including technology), capital and labour; more broadly it can be considered to include other exchanges of a social or cultural nature. These economic exchanges lead to a greater level of integration and interdependence for the economies concerned, for example, between financial markets and within production chains. The increased pace of economic globalisation during recent decades can be attributed, in part, to the removal of barriers (for example, trade in goods and services as well as capital movements) and lower costs of transportation and communication.

Globalisation is of interest for various types of analysis, including monetary and economic policies. Increased flows in and out of an economy directly affect domestic issues such as inflation and the money supply and also the extent to which these can be influenced by national policies. The knock-on effects of developments in one economy through other economies may not be immediately obvious as they pass from market to market, and from economy to economy. The challenge for statistics is to be able to provide information on these interdependencies that have increased through globalisation.

As well as requiring statisticians to think again about the range of indicators necessary to measure the economy, the evolving global economy renders the analysis of long time-series of data less useful: to what extent is the experience from a less globalised world relevant to current and future developments? This question highlights the problems for analysts developing models or interpreting forecasts.

4.2 Updating the SNA

In 2003 the United Nations statistical commission (UNSC) initiated the updating of the 1993 SNA. This was undertaken through a working group composed of representatives of the United Nations statistics division, the International Monetary Fund, the World Bank, the Organisation for Economic Cooperation and Development, the Statistical Office of the European Communities (Eurostat) and the United Nations regional commissions. The resulting 2008 SNA is the fifth version of the SNA and was adopted in two volumes, the last by the UNSC at its 40th session in February 2009. At the time

of writing the final version of the 2008 SNA is available in English as a single volume ([14]) comprising a full set of chapters representing the framework in terms of accounting conventions, the accounts, and the integration of the accounts, as well as interpretations of the accounts and extensions such as satellite accounts.

The report on national accounts to the 38th session of the UNSC identified the main changes that were recommended for the update. The updates aimed to address issues that had become more important since the previous update, to remove inconsistencies, to harmonise the SNA with other manuals, and to implement progress made in research since the previous update. The majority of the recommendations:

- were related to units and transactions that represent characteristics of an increasingly globalised economy;
- came from increased interest in the sources of wealth and debt;
- recognised the increasing role of intangible non-financial assets;
- took into account further innovation in financial markets;
- reflected the interest in better measures of the impact of pension liabilities in the context of an ageing population, and;
- recognised the need for better measures of government and public-sector debt and deficit.

There was close coordination between updating the 1993 SNA and the revision of the balance of payments manual. Attention was also paid to further harmonisation with the IMF's government finance statistics manual and the monetary and financial statistics manual, as well as with integrated environmental and economic accounting. Among the major changes were the following:

- research and development expenditure is to be treated as fixed capital formation rather than consumption, as will military expenditure of a capital nature;
- a comprehensive accounting of pension obligations of corporations and government accruing to all individuals is to be compiled regardless of the type of pension scheme;
- goods for processing are to be recorded on the basis of a change of ownership and so, for example, outward processing in foreign countries will not impact on import and export figures.

4.3 The revision of the ESA

In June 2007, directors of national accounts from across Europe set out the basis for a revision of the ESA:

- it would start from the consolidated text of the existing Regulation and subsequent Regulations, such as that concerning the recording of taxes and social contributions unlikely to be collected;
- it would cover all the recommendations and clarifications agreed at international level, such as the capitalisation of research and development expenditure;
- it should result in a more integrated system; many linked statistical areas are likely to be impacted, such as research and development, environmental, agricultural and tourism accounts, population, labour and social protection statistics, and balance of payments.

([14]) For more information: http://unstats.un.org/unsd/nationalaccount/SNA2008.pdf.

Changes to ESA95 are based on the various recommendations made in the context of the SNA update. For most of the existing chapters, the structure has been kept or only slightly amended. Three existing chapters have been extended in the new ESA, namely Chapter 9 on the input-output framework, Chapter 12 on quarterly economic accounts, and Chapter 13 on regional accounts. A number of new chapters have also been drafted:

- Chapter 19 on **European accounts** outlines the objective, scope and specifics of the compilation of European accounts, including EU institutions, treatment of the rest of the world, the aggregation and balancing issue and consistency with sources and other European macro-economic statistics.
- Chapter 20 on **government accounts** presents the basic principles concerning delimitation of the government sector, relations with public corporations, the accounting issues related to government and corporations, government net lending/borrowing and its relationship with government debt.
- Chapter 21 concerns the links between **business** and national accounts.
- Chapter 22 presents a common framework for functionally oriented **satellite accounts**, with a focus on research and development which is to be included in the core accounts in the medium or long-term. It also briefly presents satellite accounts for which a fairly complete, agreed and operational methodological framework has already been developed: economic accounts for agriculture, economic and environmental accounts, and social protection.

At the time of writing the revised ESA has been drafted and the text is in the process of being finalised. The key points in the future timetable are as follows:

- adoption of the European Commission's proposal in June 2010;
- adoption of a Regulation by the European Parliament and the Council in 2012;
- implementation of the new ESA methodology and transmission programme in 2014; it is likely that the Regulation will have two annexes, one on methodology and one on the transmission programme.

The issue of consistency of the new ESA is essential. In particular, this is being addressed by an ESA review group which brings together members of the national accounts working group and the financial accounts working group. Each draft chapter for the new ESA has been discussed by the ESA review group, while a Eurostat/ECB group has also been formed to look at the question of consistency.

4.4 GDP and beyond: measuring progress in a changing world

A number of criticisms have been levelled at national accounts, in terms of their coverage or their relevance for particular types of analysis. In some cases the solution may involve the development of supplementary tables outside of the core accounts, or even of satellite accounts. By design and purpose, national accounts in general, and GDP in particular, can not be relied upon to inform policy debates on all issues. For example, GDP has been criticised for not measuring welfare, a concept that involves many social concepts and one to which economic statistics such as those in national accounts can contribute only a partial solution. Another example is that GDP does not measure environmental sustainability.

In such cases it may be appropriate to develop indicators to complement GDP, as for example was done with the development of sustainable development indicators to monitor the objectives of the EU Sustainable Development Strategy. Initiatives to complement GDP are not new: the United Nations Development Programme (UNDP) developed a Human Development Index (HDI) to benchmark countries based on the combined measurement of GDP, health and education. The World Bank with its calculation of genuine savings has pioneered the inclusion of social and environmental aspects when assessing the wealth of nations. The OECD is running a Global Project on Measuring the Progress of Societies fostering the use of novel indicators in a participatory way. The Commission on the measurement of economic performance and social progress (Stiglitz-Sen-Fitoussi report) put in place by the French president concluded with 12 recommendations for better measures of well-being and sustainability. Several NGOs measure the 'ecological footprint' – a measurement that has been formally recognised as a target for environmental progress by some public authorities. Furthermore, numerous researchers have published pilot indices of well-being and life satisfaction.

In its Communication 'GDP and beyond, measuring progress in a changing world', the European Commission noted that there is a clear case for complementing GDP with statistics covering other economic, social and environmental issues, on which people's well-being critically depends. Work to complement GDP has been going on for years, at both national and international level and the European Commission intends to step up its efforts and communication in this field. The aim is to provide indicators that measure progress in delivering social, economic and environmental goals in a sustainable manner. The Communication proposed five actions for better measurement of progress in a changing world.

1. Complementing GDP with environmental and social indicators

The Communication notes that existing economic headline indicators such as GDP, the unemployment rate and inflation rate are not meant to reflect issues concerning environment or social inequalities: a comprehensive environmental index should be developed and quality-of-life indicators improved. Indeed, there is currently no comprehensive environmental indicator that can be

used in policy debates alongside GDP. Close candidates for such a purpose are the ecological and carbon footprints, but both are limited in scope. As methodologies for composite indices and data are now sufficiently mature it is intended to present a pilot version of an index on environmental pressure in 2010. This index will reflect pollution and other harm to the environment within the EU to assess the results of environmental protection efforts. It will comprise the major strands of environmental policy:

- climate change and energy use;
- nature and biodiversity;
- air pollution and health impacts;
- water use and pollution;
- waste generation and use of resources.

Publishing this indicator with GDP and social indicators, it should be possible to analyse the level of environmental protection and whether progress is achieved in a balanced way towards social, economic and environmental goals. In addition to this comprehensive index on harm to or pressure on the environment, there is potential to develop a comprehensive indicator of environmental quality, for example, showing the numbers of European citizens living in a healthy environment.

Income, public services, health, leisure, wealth, mobility and a clean environment are means to achieve and sustain quality of life and well-being. Indicators on these inputs are therefore important for national governments and the EU. In addition, social sciences are developing increasingly robust direct measurements of quality of life and well-being as outcome indicators; for example, the European Foundation for the Improvement of Living and Working Conditions is working on this issue. In addition, the European Commission has launched studies on the feasibility of well-being indicators and on consumer empowerment and, with the OECD, on people's perception of well-being.

2. Near real-time information for decision-making

Currently, there are considerable differences in the timeliness of statistics in different areas. For example, GDP and unemployment figures are published frequently within a few weeks of the period they are assessing and this can allow near real-time decision making. In contrast, environmental and social data in many cases are too old to provide operational information. The European Commission will therefore aim to increase the timeliness of environmental and social data to better inform policymakers across the EU.

Satellites, automatic measurement stations and the Internet make it increasingly possible to monitor the environment in real-time. The European Commission is stepping up efforts to realise this potential, for example, through the INSPIRE Directive and the global monitoring for environment and security (GMES). The European Commission has already presented the shared environmental information system (SEIS), a vision of how to link traditional and novel data sources online and make them publicly available as fast as possible. More timely data can also be produced by statistical "now-casting" techniques: for instance, the European Environment Agency (EEA) intends to produce short-term estimates of greenhouse gas emissions based on existing short-term energy statistics, and Eurostat intends to use similar techniques to produce more timely environmental accounts.

The European Commission, together with Member States, has been working to streamline and improve social surveys and reduce the time lag between data collection and publication. Whenever possible and cost-effective, the timeliness of social data will be improved.

3. More accurate reporting on distribution and inequalities

Far-reaching reforms such as those required to fight climate change or to promote new patterns of consumption can be more easily accepted if efforts and benefits are felt to be equitably shared among countries, regions, economic and social groups. This is why distributional issues attract increasing attention. For example, even if the GDP per capita figure is rising, the number of people living at-risk-of-poverty may be increasing. Existing data from national accounts such as household income or from social surveys such as the EU's survey on income and living conditions (EU-SILC) already allow for an analysis of key distributional issues. Policies affecting social cohesion need to use measures of disparity as well as aggregates such as GDP per capita.

The European Commission regularly reports on a set of indicators to inform policymakers about income disparities and particularly about the situation at the lower end of the income scale. The analysis of situations in Member States also looks at education, health, life expectancy, and various non-monetary aspects of social exclusion. Indicators of equal access to quality housing, transport and other services and infrastructure that are essential to participate fully in society (and hence to contribute to economic and social progress) are being developed. In addition, the link between social exclusion and environmental deprivation has been gaining attention and analysis of this issue will be regularly undertaken.

4. Developing a European sustainable development scoreboard

The EU's sustainable development indicators (SDIs) have been developed together with Member States to monitor progress on the multitude of objectives of the EU's Sustainable Development Strategy and are reflected in the European Commission's biennial progress report. However, this monitoring tool does not fully capture recent developments in important areas that are not yet well covered by official statistics, such as sustainable production/consumption or governance issues. For several reasons, SDIs cannot always be based on the most recent data. Consequently, they may not fully reflect the efforts that businesses, civil society or governments at local or national levels are making to meet these challenges.

To stimulate the exchange of experience between Member States and among stakeholders on policy responses, more concise and timely data are needed. The European Commission is therefore exploring the possibilities to develop, together with Member States, a sustainable development scoreboard. The sustainable development scoreboard, based on the EU's sustainable development indicators, could also include other quantitative and qualitative publicly available information, for instance, on business and policy measures.

Thresholds for environmental sustainability

One key objective of the EU Sustainable Development Strategy is to respect the limits of the planet's natural resources. These include nature's limited capacity to provide renewable resources and absorb pollutants.

Scientists are seeking to identify related physical environmental threshold values and highlight the potential long-term or irreversible consequences of crossing them. For policymaking it is important to know these 'danger zones' before the actual tipping points are reached, thereby identifying alert levels. The cooperation of research and official statistics will be stepped up in order to identify – and regularly update – such threshold values for key pollutants and renewable resources in order to inform policy debate and support target setting and policy assessment.

5. Extending national accounts to environmental and social issues

The ESA is the main basis for economic statistics and indicators within the EU. In its June 2006 conclusions, the European Council called on the EU and its Member States to extend national accounts to key aspects of sustainable development. National accounts will therefore be complemented with integrated environmental economic accounting that provides data that are fully consistent. As methods are agreed and the data becomes available this will be complemented, in the longer-term, with additional accounts on social aspects.

This will provide an integrated basis to underpin policy analysis, helping to identify synergies and trade-offs between different policy objectives, feeding, for example, into ex-ante impact assessment of policy proposals.

In the longer-term, it is expected that more integrated environmental, social and economic accounting will provide the basis for new top-level indicators. The services of the European Commission will continue to explore through collaboration with international organisations, dialogue with civil society and research projects how such macro-indicators could best be designed and used.

Integrated environmental-economic accounting

The European Commission presented its first strategy on 'green accounting' in 1994. Accounting methods have been developed and tested to the point where several Member States now regularly provide data sets from environmental accounts. Most common are physical flow accounts on air emissions (including greenhouse gases) and on material use, as well as monetary accounts on environmental protection expenditure and taxes. The European Commission plans to extend data collection in these areas to all Member States.

As a subsequent step, physical environmental accounts will be set up for energy use and supply, waste generation and treatment, water use and supply and monetary accounts for environment-related subsidies, and the environmental goods and services sector (eco-industries). The European Commission aims to have these accounts fully available for policy analysis by 2013. A legal framework for environmental accounting will be proposed to ensure that these accounts are comparable.

A second strand of environmental accounts relates to natural capital, in particular changes in stocks, the most advanced of which are accounts on forest and fishery stocks, where the European Commission will contribute to the work currently being undertaken within the United Nations.

A further challenge in the development of environmental accounting is complementing physical environmental accounts with monetary figures, based on valuations of the damage caused and prevented, changes in the stock of natural resources and in eco-system goods and services. Monetising the costs of environmental damage and the benefits of environmental protection can help to focus policy debate on the extent that our prosperity and well-being depend on goods and services provided by nature. At a micro level such valuation is conceptually sound: it is covered by several studies, notably the economics of ecosystems and biodiversity (TEEB) initiative, an on-going wide ranging valuation of ecosystem services, jointly undertaken by the United Nations Environment Programme (UNEP), several countries and the European Commission. The European Environment Agency plans to continue its work on the valuation of and accounting for ecosystem goods and services, with a view to establishing internationally accepted methods. However, translating such studies to the macro level in a meaningful way needs further research and testing. The European Commission intends to step up work on monetary valuation and the further development of conceptual frameworks in this area.

Increasing use of existing social indicators from national accounting

The existing ESA already includes indicators that highlight socially relevant issues, such as the disposable income of households and an adjusted disposable income figure that takes into account the differences in social protection regimes of different countries. Those figures reflect better what people can consume and save than the headline GDP per capita figures. The European Commission's services intend to increase the use of these indicators.