

**Task Force on Benchmarking in infra-annual economic statistics**

Chairman: Svante Öberg  
Director General, Statistics Sweden

Co-Chairman: Photis Nanopoulos  
Director, Eurostat

**Report of the  
Task Force on  
Benchmarking in Infra-Annual  
Economic Statistics  
to the SPC  
(CPS 2001/42/8/EN)**

**Annex 3  
EU-US COMPARISON:**

**Observations of the Task Force at the occasion of its  
study visit to the main Federal Statistical Agencies in the  
US**

## Annex 3

### **EU-US Comparison: Observations of the Task Force at the occasion of its study visit to the main Federal Statistical Agencies in the US**

#### **1. THE MAIN FEDERAL STATISTICAL AGENCIES**

Among the many statistical agencies in the US, eleven principal U.S. Federal Statistical Agencies are of particular importance. The two biggest ones are the Bureau of the Census and the Bureau of Labor Statistics (BLS) followed by the National Agricultural Statistics Service (NASS). The Bureau of Economic Analysis (BEA), the National Center for Health Statistics (NCHS), the Economic Research Service (ERS), the Energy Information Administration (EIA), the National Center for Education Statistics (NCES), the Bureau of Transportation Statistics (BTS), the Bureau of Justice Statistics (BJS) and the Statistics of Income (SOI) are smaller in terms of both full-time permanent staff and budget.

These statistical agencies (for an overview see <http://www.fedstats.gov>) deliver statistics about all sorts of societal aspects. The main domains dealt with are: agriculture, crime, demography, economy, education, energy, environment, health, income, labor, national accounts, national resources, safety, and transportation.

#### **Office of Management and Budget**

The OMB (<http://www.whitehouse.gov/omb>) is overall co-ordination agency for the Federal statistical system. The OMB has to ensure that U.S. key statistics remain relevant, accurate, and timely. The OMB assists the President in the development and execution of his policies and programs, most notably as far as statistics are concerned. OMB has a hand in the development and resolution of all budgetary, policy, legislative, regulatory, procurement, and management issues on behalf of the President. OMB is composed of divisions organised either by Agency and program area or by functional responsibility. OMB is part of the White House, as is the Council of Economic Advisers (<http://www.whitehouse.gov/cea>).

The budget requests are estimated \$ 3,944.4 million for statistical work to be carried out in the fiscal year 2001, including \$ 392.8 million for Census 2000. Approximately 40% of the overall funding for the statistical system (excluding funding for the decennial census) provides resources for ten agencies that have statistical activities as their principal mission. Contractors and consultants are not Federal staff and are not included in the staffing counts mentioned below.

#### **Census Bureau**

The CB (<http://www.census.gov>) is affiliated to the U.S. Department of Commerce. Fact-finding is one of America's oldest activities (the first census was taken in 1790). The sole purpose of censuses and surveys is to secure general statistical information. Throughout the decade between censuses the Bureau is continually

conducting demographic and economic surveys to produce a general view and comprehensive study of the United States' social and economic conditions.

The CB has a budget of about \$ 740 million and it has a total staffing level of 8109, of which 3960 are full-time permanent.

### **Bureau of Labor Statistics**

The BLS (<http://stats.bls.gov>) is the principal fact-finding agency for the Federal Government in the broad field of labor economics and statistics. The BLS is an independent national statistical agency that collects, processes, analyses, and disseminates essential statistical data to the American public, the U.S. Congress, other Federal agencies, State and local governments, business, and labor.

The BLS is affiliated and serves as a statistical resource to the U.S. Department of Labor. The BLS produces impartial, timely, and accurate data on social and economic conditions of the American Nation, its workers, its workplaces, and the workers' families.

The BLS has a budget of about \$ 450 million and it has a total staffing level of 2690, of which 2288 are full-time permanent.

### **Bureau of Economic Analysis**

The BEA (<http://www.bea.doc.gov>) is an agency of the Department of Commerce. The BEA produces and disseminates economic statistics that provide a picture of economic activity in the US. BEA seeks to strengthen the understanding of the U.S. economy and its competitive position by providing the most accurate and relevant GDP and economic accounts data (as well as input-output data, balance of payments, State and local area data) in a timely and cost-effective manner. BEA is one of the world's leading statistical agencies.

The BEA has a 2001 budget close to \$ 49 million, and a staffing level of 533 employees, of which 517 are full-time permanent.

### **Federal Reserve Bank**

The Federal Reserve Bank (<http://www.federalreserve.gov>) as the central bank of the United States has to provide the U.S. with a stable monetary and financial system. The Federal Reserve's principal duty is to conduct the American monetary policy. In addition to supervise and regulate banking institutions and protecting the credit rights of consumers, to maintain the stability of the financial system, and to provide certain financial services to the U.S. government, the public, financial institutions, and foreign official institutions. In support of all these activities the Federal Reserve is carrying out statistical work in multiple areas.

## **2. THE SHORT-TERM INDICATORS COVERED BY THE TF STUDY VISIT**

The TF had the opportunity to meet the management and the program managers in all major Federal statistical agencies. These meetings took place between 20-27 February 2001. They were arranged with the help of the EU Delegation through the office of the Chief Statistician at the OMB and focused mainly on indicators covered

by the Action Plan. The indicator specific observations and conclusions presented below have been prepared by the TF member attributed to the respective domain.

## **2.1 QUARTERLY NATIONAL ACCOUNTS AND BALANCE OF PAYMENTS INDICATORS (BY SIMON ALGERA AND JOHN KIDGELL)**

### **General remarks**

The BEA is responsible for compilation and publication of quarterly and annual national accounts and balance of payments. The paragraphs below relate mainly to national accounts. Given the very different way in which BoP accounts are compiled in USA, and that EU figures are, in general, more frequent (monthly) and more timely, an in-depth study of BEA's BoP systems was not considered pertinent to the TF study.

The BEA has good relationships with the other agencies that compile and publish economic statistics. It has no power to influence the statistics of these others, and takes their figures unadjusted into the National Accounts processes. It is, for example, impossible for the BEA to make adjustments to the producer prices (BLS) or labour market data (CB) to achieve greater balance in the accounts. This may go some way to explain aspects of the US system, in particular their reluctance to embark on a major balancing exercise each period, because there are these external constraints. On the other hand, the BEA argues that by showing expenditure and income estimates unbalanced they are providing users with more information (see below under Transparency).

### **Releases**

For GDP (and its breakdowns) a number of estimates are made by the BEA:

- (1) “advanced” (after 25-30 days);
- (2) “preliminary” (after 55-60 days),
- (3) “final” (after 85-90 days),
- (4) “first annual” (in context of National Annual Accounts)
- (5) “second annual” (in context of National Annual Accounts).

The annual estimates are published in June (as part of the regular quarterly cycle). There are also benchmark revisions (about every five years), but these are less relevant to the TF study. In the past, BEA also published a “Flash” estimate, just before the end of the reporting quarter. This release was stopped, although the accuracy was not much inferior to the “advanced” estimate.

The expenditure measure is the definitive measure of GDP (though they refer to it as “product”). In the short term, it is not balanced with the income measure. Periodically (usually every five years), the expenditure measure is benchmarked to estimates in an input-output context. GDP is build up from the expenditure components of the economy: household consumption, government consumption, capital formation (including changes in inventories), and external trade in goods and services.

For the first three estimates there is not a “production approach” (as sum of the value added of the branches of industry). This means that not all available short term

statistics are used (and balanced). In particular, the index of industrial production is not used in the compilation of any of the three first estimates of quarterly GDP. The “income approach” (as sum of the compensation of employees and profits) is compiled and published [see, for example, table 8 of BEA “advance” press release], as supporting evidence, but no attempt is made to reconcile it with the definitive (expenditure) measure. No balancing adjustments are made to components of either measure.

The BEA does not compile financial accounts, instead they are compiled by the FED (“Flow of funds accounts”). Full sector accounts on a quarterly basis are therefore not compiled in the US. However, key sectoral indicators such as the personal sector saving ratio are compiled. These are produced to the same timetable as GDP.

### **Data sources**

For the first three estimates the data sources are more or less the same. The most important difference in the three estimates is the coverage and response rate of these data sources; the gaps being filled (less and less, as they move through successive estimates) by estimating the missing month and/or series. In part, these estimation procedures can be fairly subjective. In the “first annual” and especially in the “second annual” estimates.

For the earlier quarterly estimates, there are two main sources that are supplemented with others: retail trade and employment.

A first release of monthly retail trade data is available from BLS 15 days after the end of the month, and a second, revised release with a larger coverage after 30 days. These data are in current prices and have to be deflated by components of consumer and producer price indices (which are also available at the same time). The availability of these data is considerably earlier than in most EU Member States, where quarterly retail trade figures are typically available between 40 and 70 days after the end of the quarter.

A monthly employment survey, relating to the second week of the month, provides a range of useful and rapidly available information, including weekly wages, hours worked (of productive workers), and number of employees. These are available 15 days after the reporting month. Compared to the European statistics this is a very quick and complete data source. The “snapshot” of the second week which is assumed to be representative of the whole month is the key reason for the very early availability of this source. There is a small but well understood bias in using this mid month estimate, and BEA is able to make appropriate adjustments. Information from this survey on employment and wages is used as a source for estimating compensation of employees and significant parts of household consumption, particularly on services.

Early estimates of quarterly capital formation are based largely on “commodity flow” models. Commodity flow methods are also used for some components of household expenditure. Moreover some quarterly statistics are used (QFR). There are also a variety of other (official and private) sources on components of consumers' expenditure.

## **Indicator quality**

### *Revisions and reliability*

For the “advanced” estimate, employment data is available for the whole quarter; retail trade is available for the first two months of the quarter, and the third month has to be estimated. Details of the assumptions underlying this estimate are published. For the “preliminary” and “final” estimates, the third month of retail trade data becomes available. Information on monthly statistics is more complete, and some additional quarterly statistics become available. The reliability of the first three estimates therefore reflects the reliability of these sources. In the annual rounds of national accounts estimation, a wider range of more complete data sources are used. This especially to the second annual estimate. The largest revisions are thought to occur between the first and second annual estimates, but this has not been verified from available revisions data that was given to us.

It is difficult to make a direct and objective evaluation of the relative quality of the US and EU estimates of GDP. However, it is clear that the advanced estimate that appears some two months before the present EU/Euroland GDP is valued by US users, and seems to provide an adequate indication of the state of the US economy. On the other hand, the first US GDP estimates cover only expenditure indicators, which are not aligned with other indicators, such as income and the index of production. We did not get information on what US users think of this lack of coherence. The size of revisions to the first three estimates of US GDP is, of course, not a perfect indicator of the accuracy of these estimates, as it reflects only the accuracy of the (limited) data sources used.

### *Transparency*

The methods used in compiling GDP are very transparent. This is particularly so for the three quarterly rounds where elements of estimation are used. The assumptions (methodologies and numbers) underlying these estimates are fully described in the press releases. No attempt is made to balance away (embarrassing) discrepancies, for example, GDP measured by the two approaches – expenditure and income. No adjustments to aid coherence are made to data sources already published by other institutions. For the first three estimates of GDP, BEA has made a very clear and public choice of timeliness and transparency over coherence. This is what US users seem to want.

## **Main observations**

- early quarterly national accounts estimates based on timely monthly surveys;
- monthly surveys made more timely by using day or week in mid-month, or first part of month as reference point;
- compilers prepared to make estimates for missing data, particularly (the whole of) third month of quarter;
- different estimates, particularly of GDP, are published with no attempt to reconcile or balance them; this aids timeliness, but hampers coherence and consistency;
- exposure of these differences reflects a policy of transparency, which is also seen in publication of all their estimation procedures; and

- balance of payments processes are less frequent and less timely than most EU systems.

## **2.2 LABOUR MARKET INDICATORS**

### **(BY GIAN PAOLO ONETO AND FABRICE LENGART)**

#### **General remarks**

The BLS is an independent national statistical agency included in the organisation of the Department of Labor (DOL). It “collects, processes, analyses, and disseminates essential statistical data to the American public, the U.S. Congress, other Federal agencies (..)” and “also serves as a statistical resource to the DOL”.

The BLS conducts many surveys and programs collecting information on the labour market. The production of short-term indicators is based on three main programs corresponding to different sets of variables: the Current Employment Statistics (CES, providing establishment data on employment, worked hours, and earnings), the Current Population Survey (CPS, providing household data on employment, unemployment and labour force status), the Employment Cost Index (ECI, a labour price index based on a quarterly establishment survey). Those programs are the main focus of the present analysis.

The BEA draws upon BLS labour market data for its NIPA compilation process and the FED uses them as an input to compile its industrial production series. In turn, some statistics produced by the BLS are based on surveys conducted by the Census Bureau on a contract basis, or carried out jointly with State Agencies.

The BLS complies with the general dissemination policy guidelines set for federal statistical agencies. Data are disseminated on paper and electronically. The level of detail of released data varies across programs, but is for the three surveys discussed here very high. In particular, establishment data on employment, hours, and earnings are published at very detailed industry level (up to four-digits SIC code), albeit with some delay in comparison with the release of aggregate data.

The BLS documents its statistics in a comprehensive and clear manner. Data collection procedures, estimating methods, sample features (including sampling errors) are described in some detail both in regular publications and on the web site. Furthermore, specific methodological issues are analysed in operating manuals (available upon request) and in statistical documents. All in all, the information policy seems to be very transparent and very much oriented at maintaining the perception that data are based on a sound (and verifiable) scientific background.

#### **Indicator Quality**

##### *Timeliness and punctuality*

The monthly indicators (statistics on employment, hours, earnings, unemployment, labour force) are based on two distinctly different surveys. Nevertheless the results are released jointly on the Friday three weeks after the reference week which is the week including the 12<sup>th</sup> of the month. Hence, the results are released during the first ten days of the month following the reference month. This is by any standard an extremely rapid release.

Whilst considering one week instead of the whole month as the reference period makes the task of releasing timely indicators easier, it must be stressed that compiling indicators based on very large samples (as both CES and CPS are) in such a short span of time is a demanding target. In turn, there are some drawbacks in terms of data significance: users tend to read these indicators as monthly values (and the comments in the BLS press release refers also to the month) while this is, strictly speaking, not the case. However, using only a reference week in monitoring the short-term evolution of the labour market is likely to have a very minor impact in terms of potential bias (e.g. due to systematic infra-month patterns). For wage data it must be noted anyway that the concept of weekly earnings is very traditional in the US.

### *Accuracy*

The indicators are inherently different in terms of accuracy measures.

CES survey statistics based on establishment data are revised in course of time and thus released in three steps: two preliminary estimates and one final estimate. Revision measures are regularly published in the monthly release of “Employment & Earnings”. Furthermore, the employment indicators undergo an annual benchmarking procedure based on a population count (for March of each year) derived from the administrative file of employees covered by the Unemployment Insurance. The benchmark revision gives a supplementary measure of survey errors that is made available to users.

CPS survey statistics based on household data do not undergo a revision process. All results are based on returns from the whole panel of respondents and include an adjustment for non-interview (accounting for 6-7 percent of the sample). However, detailed sampling error tabulations considering major characteristics of the population (age, sex, race, labour force status) are published.

The ECI indicators are final once published in the press release. The share of temporary non-responses is fairly low (about 7 percent) and an imputation technique is used to cope with non-response. Standard errors for all variables are made available on the web site of the BLS.

### *Contents*

BLS short-term labour market statistics seem to accommodate user needs to a large extent. They cover almost every aspect of the evolution of the labour market. The only indicator still missing concerns job vacancies, but the new "Job Openings and Labour Turnover Survey" is going to fill the gap.

Indicators based on establishment data cover all nonfarm employees (including government). The breakdown by industry is extremely detailed (based on the SIC classification) and information on States and municipal areas is also provided. As statistics on employment, weekly hours, hourly and weekly earnings levels are published, it is possible to monitor both changes over time and cross-section differentials. Household data (corresponding to labour force survey data in the European tradition) are used to compile both classical short-term indicators (e.g. participation and unemployment rates, unemployment duration, etc.) and provide detailed structural information on the situation of the labour market.

ECI indicators are also compiled to serve two quite different needs. The aggregate index is considered to be a crucial piece of information for monitoring the evolution of costs at a macroeconomic level. Detailed data (by industry, by occupation, by region, by union status) meet the needs of a range of other users (for instance, in the field of industrial relations).

The collection of labour market data is geared towards the compilation of federal indicators. Even if the statistical process is conducted jointly by Federal and State institutions, the purpose of the CES is to provide global employment figures (the press release does not give any state level details at all). States are authorised to use their State level data for their own purposes (but not all of them do it). The same rules apply for the CPS: all States are interested in producing their own unemployment rates and use micro data coming from CPS to do so. However, the quality of such indicators is not very satisfactory due to small sample sizes at State level. In any case, federal figures and state figures are not comparable.

### *Coherence*

Establishment and household data are, by definition, not coherent. In this respect, the dissemination policy of the BLS has an interesting feature: distinct employment indicators based on the two sources are published in joint releases, making clear to users the differences between sources and their complementary nature.

The coherence of different sources of earnings and labour costs information seem to be an issue. Currently, the BLS is in the process of integrating the ECI and other compensation surveys in the common framework of the National Compensation Survey. In turn, earning data based on the CES survey are not coherent with those gathered in the compilation of the ECI index. While employment estimates based on establishment data are regularly benchmarked with administrative information, a benchmarking procedure for earnings does not exist.

### **Data sources**

All BLS short-term surveys are voluntary. The BLS has to make substantial and sustained efforts to maintain a satisfactory response rate (which is for final estimates in general above 80%).

Several aspects are noteworthy. The CES sample survey size is very large. The process is managed through State agencies that collect and edit the reports. In the same survey various data capturing devices are utilised. The touchtone data entry (TDE) technique, however, plays a major role (accounting for more than 60% of the responses). In the ECI survey (based on a relatively small sample) the data collection is initiated by direct visits of field economists, which scrutinise the pay structure of the reporting unit

Administrative information plays a central role in maintaining an updated business register. The CES sample is drawn from the Longitudinal Data Base (LDB) that is a “register” of all employers covered under the Unemployment Insurance Tax system. As such it is considered to represent “nearly all nonfarm elements of the U.S. economy”.

## Specific aspects of the Current Employment State survey (CES)

The CES is a monthly voluntary establishment survey that provides current employment, average working hours, wages. The BLS considers the results to be reliable, at least within limits. If results are difficult to interpret, the BLS contacts respondents and checks their information (through telephone call). If doubts cannot be removed, the data are discarded. This verification function is done at a State level.

CES data are used extensively in the compilation of macro-economic indicators: the BEA uses employment and average weekly earnings to estimate aggregate earnings and employment. The FED draws upon average working hours to estimate parts of its IP. The Conference Board also uses CES data to compile coincident and leading indicators. Employment data are used as denominator for the computation of productivity data.

The CES is the only important survey conducted on the basis of a close relationship between Federal and State level institutions. 400.000 establishments are surveyed each month. The BLS has contracts with States which are responsible for certain aspects of the statistical procedure. The BLS pays States for collecting data (the payment is more or less proportional to the size of the sample) and allows them to use their data for their own purposes. Estimates, however, are calculated independently at Federal and State levels. The sum of State estimates does not (necessarily) lead to the national estimate. Federal estimates are usually released two to three weeks before State estimates are available.

The BLS is currently in the process of redesigning the CES process. In the past the survey was conducted by mail. The States were directly responsible for the sample design. In the new process, the sample is selected at national level and the data are collected in different ways (mostly by touch-tone telephones). This allows improving quality control. By default, data entries are directed to the headquarter in Washington, but States can decide to keep a direct control on answers. States remain responsible for calling back procedures in case of problems. The new process is put in place by industry and will be completed by 2003. The eight regional offices of the BLS conduct audits in the States every year.

The reference week is the week containing the 12<sup>th</sup> of the month. On the Friday two weeks later, there is a first close off to compute a first estimate (generally on the basis of 60% of the sample). The press release comes out one week later. A whole week is dedicated exclusively to the analysis of the results. Fourteen industry analysts scrutinise the indicators and devote their time to understand and interpret the figures and support them with other information. As a whole, the CES programme employs 60 economists.

A second estimate is compiled three weeks later on the basis of 75% of the sample and a third one another three weeks later with by then 85% of the sample. The average revision between the first and the second estimate is 30 000 to 50 000. Four times per year, the seasonal adjustments are equally revised.

There is also a benchmark procedure based on data recorded by the unemployment insurance system. The UI March data (usually available in November) are used for benchmarking. The data are adjusted to account for the birth and death of firms

(available only through the benchmark). Currently, 150 000 jobs are added to employment data to adjust for this bias (which means that figures might be negative if this bias procedure is overstated).

### **Specific aspects of the Employment Cost Index (ECI)**

The ECI survey was launched in 1978. It is widely used being the only measure for total labour costs in the US. In particular, it is used as input by the BEA. This survey is voluntary and part of the national compensation surveys program (75 Million \$ a year, of which 20 Million \$ a year for ECI). Seven surveys belong currently to the national compensation surveys program. A reform is underway that aims at harmonising sampling procedure, so that individual data coming from different surveys can be directly compared.

The staff consists of 90 people in Washington (of whom 30 statisticians and 45 computer programmers) and 250 full time economists in the field. They are equipped with a laptop computer with access to all BLS applications and devote half of their time to ECI. This is a very labour intensive survey (travel costs and salaries account for 75% of total costs). The States are not involved at all in the process. Compensations are quite complex in the US, not at all unified and always evolving (for example, the BLS is working on integrating stock options and variable pays). The sample design makes use of the Unemployment Insurance Scheme.

The ECI survey provides quarterly information on wages and supplementary benefits (more than 300 different systems). Compensation matters are regulated through States (a little) but most compensations are voluntary. It takes numerous visits to get an establishment into the sample, for the field economist has to lead a very precise interview so as to get accurate data. The complexity of ECI is hidden in the process of standardising the variety of information that is collected.

The ECI survey covers public and private sector (but Federal and local government are treated differently from the rest). 18 000 establishments are surveyed each quarter and the rate of positive response is 75%. An establishment that agrees to enter the sample remains in for 5 years.

There is a separate quality program (technical re-interview program) to make sure that the interviewer actually did the job and to assess the accuracy of the information collected. A lot of attention is also paid to dissemination and security matters. However, there is no real benchmarking process. As compensation levels are given by other programs, the ECI survey concentrates on qoq changes.

### **Specific aspects of the Current Population Survey (CPS)**

Funding for the CPS (35 Million \$ a year) goes mostly to BLS, the rest to the Census Bureau. However, the BLS has contracted data collection to the CB, so that in the end a substantial part of the CPS funding goes to the CB.

The labour force statistics team at the BLS (economic analysis and survey design) counts twenty persons. However, another six statisticians also working for the CES have to be added and so some ten persons in charge of the production. The CB staff working for the CPS programme have to be added as well.

The BLS is responsible for the sample design, the interviewing strategy, the interviewer training, and the questionnaire design. They have cognitive psychologists and economists working together for these tasks. The CB is responsible of the operational part of the survey from data collection up to weighting or grossing up and edited files. 1500 people are collecting data (in personal interviews and telephone interviews). The first interview is always done in person.

The sample is drawn from the address lists of the decennial census. The CPS programme does not trace respondents, instead discards them if it is not possible to match them (e.g. in case of a household moving elsewhere). The response rate is 93%, 3% refuse to answer. The rest is probably on vacation or could not be contacted for other reasons. The sample consists of 50 000 households (i.e. 100 000 people). A household enters the sample for 4 month in a row, is then out for 8 months, to be back in for another 4 months (so that  $\frac{3}{4}$  of the sample overlaps mom and  $\frac{1}{2}$  of the sample overlaps yoy).

The data collection process is completely computerised since 1994. This allows to make the survey more complex. Each question depends on the answer to the previous question, so that a paper copy survey would be 50 pages long, but the computer guides automatically to the right question. Computerisation has also helped to improve data quality. An example: households are first asked on the best way to report the wage (monthly, weekly, etc.) and the computer automatically converts the answers into a weekly wage.

The reference week of the survey is the week containing the 12<sup>th</sup> of the month. Interviews are made the following week. By Monday of the week after data collection is completed and by Friday the files (data and weights) are completed and sent by secure phone line from the CB to the BLS. Then the BLS checks the files, conducts a detailed analysis, and makes a seasonal adjustment. Results are released on the Friday of the following week. As a matter of fact, CPS could be released earlier but the BLS waits for the CES results (the two are published together). The last days are devoted to the writings of the reports and the preparation of the press conference.

Additional questions are asked systematically in the CPS programme, on income in March (the month during which households have to declare their income to the fiscal administration), and on hourly earnings in April and August.

CPS statistics are not revised systematically (except seasonal adjustment). However, a benchmark revision takes place once in a decade at the occasion of the population census.

Nevertheless some cross-checking between CES and CPS results is made. Data on earnings seem to be quite close, but for other income components (e.g. interest revenues) not. Moreover there seems to be no close relationship between CES and CPS employment figures. CPS employment statistics are considered to be unreliable, while the unemployment rate is believed to be good.

State unemployment statistics do not come directly from CPS. There are models that strip out the noise in the State level unemployment, using also UI claims.

Naturally, the results become ever more questionable the lower the geographical level, nevertheless State level figures are used extensively.

## **2.3 CENSUS BUREAU SHORT-TERM STATISTICS (BY BENTE DYRBERG AND GIAN PAOLO ONETO)**

### **General remarks**

The Census Bureau submits, like any other agency, its budget and an annual statistical programme to the OMB. Every three years, each programme officer also has to submit an evaluation report about his programme to the OMB. This report is not subject to any in-depth discussions with the OMB, but a useful CB-internal tool for further improvements. The CB has to get the sample sizes of all its surveys approved by the OMB (paperwork reduction act). Moreover, it needs OMB approval for deviating from the OMB's dissemination principles for the principle federal indicators. This is the case for an array of CB statistics submitted before the official release already to the BEA for the compilation of Quarterly National Accounts.

The CB conducts regularly twenty-seven (Dec. 2000) economic surveys, some of them on a contractual basis for other institutions: e.g. the Foreign Investment survey for the BEA and the Plant Capacity Utilisation survey for the FED.

Statistical data are disseminated on paper and electronically. The access to electronically disseminated data is via the Internet and is (first) available 3-4 minutes after the release times. In addition, there is a press locker system. Accredited journalists are given earlier access to the data in a special locked room, but not allowed to leave the room before the official release of the data. Data considered to be important are released already at 8.30 a.m., others at 10.00 a.m. Release times are centrally coordinated between agencies. The President's Council of Economic Advisers is informed one day before the official release, at 16.00 p.m.. The Council can pass data on to others deemed appropriate, e.g. the Federal Reserve Bank.

There is no general pressure for reducing response burden or releasing the statistics earlier. There are no plans for compiling any new indicators. There are, however, plans to improve the statistical coverage of the service sector and a survey on e-commerce has recently been launched. The CB plans also a redesign of its Business Register, which is the basis for all its surveys and strongly influences the quality and the comparability between statistics. The CB works also hard on alternative methods of data collection.

### **Indicator quality**

#### *Releases*

Historically, the 1969 guidelines from the OMB's predecessor obliges (first versions of) principal federal economic indicators to be released not more than 22 working days after the reference period. This had a major impact on timeliness of the CB's indicators. The statistics are very rapid compared to European standards. The rapidity is helped by the fact that several versions are released.

The CB operates normally with a set of revisions. For the most important monthly statistics (e.g. manufacturers' shipments, inventories and orders, or retail sales) there is typically the following pattern of releases:

- (1) "advanced"
- (2) "preliminary"
- (3) "next month's advance"
- (4) "next month's preliminary"
- (5) "final 1" after benchmarking with the corresponding annual survey
- (5) "final 2" after benchmarking with the corresponding next year's annual survey
- (6) "final 3" after benchmarking with the quinquennial censuses ending 2 and 7.

#### *Accuracy*

At the occasion of each release, the previous results are always compared with the revised results. Detailed information concerning the accuracy (measured in terms of mean revisions of month-to-month percent changes over a five-year period) is published in the monthly press releases; a more comprehensive analysis of revisions is included in the performance evaluation submitted to the OMB.

Response rates and sometimes even source data vary between the different releases. This implies that aggregation levels and coverage vary as well. An advanced releases often does not cover all branches or is on a more aggregated level.

#### *Coherence*

The coherence between statistics produced in different agencies is hampered by legal conditions. Data sharing on micro level, i.e. on individual level is not allowed. The exchange of data is therefore on aggregated level. The OMB is currently preparing a legal act on Data Sharing.

### **Data collection**

#### *Voluntary surveys*

Except for two quarterly surveys, only annual surveys are compulsory/man-datory. *US short-term statistics are voluntary.* The agencies need to do a lot and have to be very creative to obtain sufficiently high response rates. The CB considers that this is very time-consuming. Voluntary surveys are in a certain way more expensive than compulsory surveys. The choice was widely discussed in the US about 10 years ago, but is currently not on the agenda.

Voluntary surveys give lower response rates. The rate varies from survey to survey, but the coverage of advance estimates is typically 60-65 %. The response rate for later estimates (at best) and compulsory annual economic surveys may range around 80 - 85 %. The possibility of demanding data in compulsory surveys is only used to a very limit degree; when the report from a large (and representative) company is missing the staff devotes a lot of attention (through phone calls and visits) to get a response.

Different data collection methods are used: Mail scanning, electronically questionnaires via Internet, a fax system (where data is stored in an electronic file)

and touch-tone data entry. Also field workers are used to collect data for some statistics, e.g. construction statistics.

### *Registers*

US statisticians have to cope with some Business Register problems. The CB enterprises and establishments registers are based on information from the Internal Revenue Service (IRS). The BLS has another establishment register based on the unemployment insurance scheme. However, it is illegal to merge these registers. Some common efforts are about to be launched to compare the data. The CB has plans to redesign its Business Register. In general, administrative registers are seldomly used. This is mainly due to the small number of US-wide registers.

### **Specific aspects of retail sales indicators**

The CB's retail sales statistics programme is handled by a team consisting of some 20-25 persons.

Retail sales survey data are used for the advanced estimate of sales and the current estimate (with preliminary and revised releases) of sales and inventories. The advanced estimate is released about 9 working days after the end of the reference period. It is based on a sample of about 4.000 retail companies (with any number of establishments) which is a sub-sample of the full retail sample; 900 companies are sampled with probability 1. The survey is voluntary (with a response rate of about 60%). Data are collected by mail and increasingly by fax (about 75%). Forms are sent out one week before the end of the month (then the survey is based on early reports subject to larger uncertainty); from the 3<sup>rd</sup> day of the following month non-responding companies are solicited by phone. On the 8<sup>th</sup> working day starts the data processing. The sales are estimated as follows: the ratio of current month to previous month sales based on the advanced sample is utilised to update the level of the previous month sales based on the full sample (preliminary estimate). The 12<sup>th</sup> or 13<sup>th</sup> the publication is released.

The monthly retail trade survey (preliminary) is based on the full sample, including just above 13000 companies (of which about 3000 sampled with certainty). The collection of data lasts two weeks and a response rate close to 75% is typically obtained. The indicators (in current dollar value) are released six weeks after the end of the reference period and are termed "preliminary estimates". The following month a revised value (the "final estimate") for the previous month estimate is published.

The monthly survey (but not the advanced one) is also used to gather data about the inventories of retail trade companies. About 4000 businesses (again a sub-sample of the full survey) are selected to obtain inventories data. The response rate for this survey is lower than for the sales survey.

The annual retail sales survey (based on a sample of 24.000) plays a central role in the estimation process. Annual estimates are used to benchmark monthly estimates. The latter are revised so that they match the yearly averages of the annual survey. The annual contains the monthly questionnaire, but the results of the annual survey are considered more reliable; the annual survey is compulsory (with 90% response rate) and the results of annual survey are adjusted to the results of the quinquennial

retail sales census. The samples in the monthly surveys are drawn from the previous census (1997).

Recently the retail trade survey programme has been extended and contains now also a quarterly e-commerce survey. The estimate is based on the sample of the monthly retail trade survey, however, firms report the value of their e-commerce sales separately.

### **Specific aspects of construction indicators**

The construction statistics of the CB are based on three survey programmes: the Building Permits Program, the Survey of Construction Program, and the Value Put in Place Program. These programmes are handled by a staff of about 20 persons supported by 230 field workers.

The *Building Permits Program* focuses on information concerning building permits issued for new private residential construction. Data are collected monthly from a sample of 8600 local authorities issuing permits. Currently there are about 19.000 authorities issuing permits (which, by the way, are not required everywhere in the US). The survey is carried out by mailed questionnaires. The responses come in mostly by mail and, in a few cases, by electronic transmission. In some cases data are collected by state agencies. During the editing process, the staff can phone respondents to confirm or correct their responses.

Monthly estimates are compiled about the number of housing units authorised, broken down by typology (one, two, three or four, five and more family buildings). A preliminary estimate is released on the 18<sup>th</sup> of the month following the reference period; at the end of the month a revised estimate is released. A revision based on the results of the annual survey is released four months after the reference year and covers about 85% of total permits.

The *Survey of Construction Program (SOC)* collects data on new houses started, completed, and sold each month. Three separate reports are published monthly: housing starts, new one-family houses sold, housing completions. In addition, the survey collects information on the characteristics of new houses (prices and physical characteristics) that is published in an annual report.

SOC is a field survey carried out by 230 field officers (covering about 900 permit offices). They monitor a sample of building permits (1 out of 4) through interviews (personal or by phone) of the builder. The builder is asked about whether the house was started, completed or sold.

The *Value Put in Place Program (VIP)* collects data on the value of monthly construction work from various sources: a combination of indirect estimates and sample surveys. The value of construction of single-family houses is derived from SOC data; the value multi-family units is collected from builders through a mail survey termed CPRS (Construction Progress Reporting Survey) with a response rate of about 60%; information on improvements for owner occupied houses is collected through the Consumer Expenditure Survey conducted by the CB for the BLS. The value of construction work for non-residential buildings and local authorities construction is collected through the CPRS survey with a response rate just below 70% (the sample is based on a projects list by Dodge, a private

company); information on federal construction is collected from various federal agencies (response rate 85%); information on public utilities construction is provided by regulatory agencies and other sources. The monthly publication about “Value of construction put in place” provides estimates by type of construction in current and constant dollar with price deflators. Underestimation is believed to be a problem.

### **Specific aspects of shipments, inventories and orders indicators**

The M3 survey programme is handled by a staff of 18 persons and deals with shipments of goods, inventories, unfilled orders. New orders are calculated as shipments plus change in unfilled orders. The M3 survey focuses on estimating percent changes in the variables from the previous month rather than levels for the current month.

The panel size is relatively small: almost 4000 companies. However, large companies are asked to submit separate reports for each division (i.e. for each unit that can be identified separately in terms of industrial activity). The reporting units are close to 4500 and cover around 60% of total sales. An advanced estimate is release 27 days after the reference period and based on partial data (typically 85% of the final sample). A revised estimate based on the complete sample is released 34 days after reference month. Final data are published with the preliminary release of the following month.

Data collection is still mostly done by mail, but has gradually shifted from mail forms to telephone responses. Some information is collected by TDE (touchtone data entry): respondents enters numeric responses by pressing the touchtone phone buttons, with a voice feedback allowing the respondent to check the correctness of the data. This technology has reduced the length of the collection process and reporting errors (but no formal measures of quality gains are available). New IT tools (e-mail, voice recognition) have been introduced recently, but they are applied to a small share of the responses.

As the survey is voluntary, the staff makes any effort to maintain companies in the panel. Non respondents are closely monitored, solicited by phone and even visited from time to time by staff members. The staff has survey contacts in large companies. Annual benchmarking plays in this survey also a pivotal role. The estimates of annual shipments and end-of-year inventories obtained from the monthly survey are benchmarked to annual data compiled in the annual survey of manufacturing and in the quinquennial manufactures census. The size of the revisions due both to late responses and to the benchmarking process are regularly published, according to the general revision policy.

Industry analysts in the M3 team monitor the information reported by influential companies and compare them with the evolution of the indicators at industry level. Comparisons with other business cycle indicators (in particular industrial production) are not taken explicitly into account in any formal manner.

## **2.4 EXTERNAL TRADE STATISTICS**

**(BY SIGVARD AHLZÉN)**

The CB compiles statistics about the external trade in goods and publishes them monthly. These statistics make use of the documents collected by the Customs Service. Electronic reporting is widespread. Monthly figures are published seasonally adjusted (current and constant dollar) and unadjusted. Monthly data include actual months transactions as well as a small number of transactions for the previous months. Each month the aggregated seasonally adjusted (current and constant dollar) and unadjusted export, import and trade balance figures, as well as the end-use totals for the prior month are revised. However, SITC and country detail data are not revised monthly. Annual revisions for the months are made in June (when April data release) to reflect corrections received subsequent to the monthly revisions. These revisions are reflected in totals, end-use, SITC and country summary. Revisions are regarded as small without any bias.

The statistics are based on a complete enumeration of documents from the Customs and thus not subject to any sampling errors. The statistics are only subject to several types of nonsampling errors. A detailed discussion of such errors is available in the document "U.S. Merchandise Statistics: A Quality Profile".

Statistics are published in SITC (rev 3). About 500 items of the 22 000 items of the commodities classification are identified as "advanced technology" for which a total for imports, exports and balance is published. The CB releases its statistics for trade in goods together with the BEA's statistics on services in a common publication - U.S. INTERNATIONAL TRADE IN GOODS AND SERVICES - about 45-50 days after the end of the month.

Since 1989 there is a special data exchange arrangement with Canada. Both countries collect only imports and use the counterpart information as the basis for exports. The use of Canada's import data to produce U.S. export figures require several alignments related to coverage, valuation, reexport and exchange rate in order to compare the two series. There are a number of problems, for example transit exports.

## **2.5 PRODUCER PRICE INDEX**

**(BY EVA ELVERS AND ENRICO GIOVANNINI)**

### **General remarks**

The Producer Price Index Program is handled by altogether about 260 employees. In its more than hundred years of existence the programme has undergone several changes: in sampling methods, in domains covered, in expanding into services etc. The PPI is based on a monthly survey and relates to price quotations for the Tuesday in the week containing the 13<sup>th</sup> of the month. Only for a few domains known to be particularly volatile the reference period is somewhat longer.

In recent years the PPI was extended from manufacturing and commodities into services. This work started in the 1980s. Some additional funding has been received, but there have also been budget cuts. Currently the industry coverage is at 85%; except for construction, and the services coverage is at now about 50 %, but likely

to be increased to somewhat above 80 % in 2003. Unlike the CPI the PPI is not broken down by regions. Prices refer to domestic production without distinguishing from exports. The index type is fix-based with weights from the quinquennial economic census.

### **Data sources**

The PPI was initially based on a judgementally selected sample, but uses now probability sampling. The first stage selects about 28.000 establishments. The second stage item selection results in about 105.000 price quotations. It was recently modified to get a higher coverage at detailed levels and thereby also longer time series. Nearly 7 000 sample units are initiated annually. For a selected set of industries the renewal rate is higher than the usual seven years. The establishment selection allows the compilation of detailed product-class price indices.

### **Indicator Quality**

#### *Releases*

The PPI is released about two weeks after the end of the reference month: a production time of about one month. The release is almost always on time. The PPI is revised after four months. The changes are mainly due to new data.

#### *Content*

The published statistics are very detailed with about 3 000 commodity indices and 6 000 industry indices published monthly, roughly 3 500 on the most detailed level. The detail is considered to have a positive influence on response rates, which increased from about 25 % initially towards 90 % today. The PPI is widely used for contract escalation, thus its large detail. Considerable use of the PPI is also made for deflation. Documentation is available through the BLS home page. This includes guidelines to using PPI for contract escalation purposes.

#### *Accuracy*

The refusal rate is between 10 and 20 %. Quality adjustments are made, in some cases by hedonic techniques. There is much fieldwork involved in hedonics with many contacts to learn and understand how prices depend on various factors. Experts who devote considerable time to enhance their industry knowledge do the editing at industry level. Comments from National Accountants are equally considered. PPI is monthly with one day as the reference time: the Tuesday in the week containing the 13<sup>th</sup> of the month. For a few domains known to have volatile prices the period is longer.

However, there are no regular accuracy measures. There are some indicators, though, such as a few different rates for frame coverage and response rate. There is a hope to have variances and also to have a better sense of differences between preliminary and final. In the revision after four months the differences are mainly due to more data.

The sampling frame seems to be somewhat old and the classifications not very good. Hence many units, as much as 18 %, are out of business or out of scope (the latter

may possibly be used in the survey, although elsewhere) so that a lot of fieldwork is again needed to overcome these deficiencies.

The PPI index levels are chosen in cooperation with the BEA and the CB. There are also discussions within the BLS to minimize overlap with CPI.

## **2.6 CONSUMER PRICE INDEX (BY ROLAND GNOSS AND FABRICE LENGART)**

### **General remarks**

The CPI is used mainly for general measurement of inflation (economic indicator), price adjustment of stocks and flows (deflator) and indexation for various purposes (e.g. adjustment of social security contributions and benefits, pension adjustments, adjustment of wage and salary incomes or children's allowance, stable-value clauses in private-law contracts).

Considerable resources are used for CPI compilation. In the entire CPI programme, over 700 persons are employed. 480 of them are needed for field work, the majority of them (about 400) working part-time. 240 persons are employed in data processing in the broadest sense of the term (38 of them performing pure data capture activities). Among the remaining about 200 academics (economists, statisticians, computer scientists) there are as many as 40 so-called commodity experts who are in charge of quality adjustments (incl. hedonic technique).

### **Indicator Quality**

#### *Contents*

The prices for the CPI are collected through a monthly voluntary sample survey among some 20,000 shops (sales outlets). The sample design is of a multi-stage type. What is collected is 70,000 prices of goods and services and 10,000 rents. Commodities and services are grouped into eight major groups (food and beverage; fuels and utilities; household services and furnishings; apparel and upkeep; transportation; medical care; entertainment; other commodities and services). The CPI coverage of health services is still weak.

The weights are obtained every 5 years from the Consumer Expenditure Survey of the CB, covering 5,000 households. Up-to-date information on the structure of volumes purchased with regard to shops is available from telephone interviews conducted by the BLS among households.

Quality adjustment with hedonic technique are made for refrigerators, TV sets, microwave ovens, personal computers, camcorders, video cassette recorders, DVD players, audio equipment, college textbooks. Seasonal adjustment is performed using X-12-ARIMA. A so-called core index is calculated.

#### *Accuracy*

The scientific input regarding both sampling theory and product know-how is immense, thus forming the basis of the reputation and, consequently, the quality of the index. For external observers it is not easy to objectively assess whether the

benefit of that large input of theoretical and expert knowledge is impaired by the number of price observations (or prices observed) in the various subsample strata. What is really crucial for the quality is the representativity/ reliability/ well-founded substance of price observations. A major aspect of quality control at the BLS appears to be macroeconomic checking of the result, i.e. its economic plausibilisation (alignment with other information and aggregates from other sources) before publication. Before the indices are published, the results undergo an economic plausibility check in which a number of economists (about 5 or even more?) are involved. This includes agreeing upon how to formulate interpretations of the results in the public.

The great public interest in the CPI spurs the BLS statisticians to keep improving the index. Nevertheless, when it comes to applying specific methodologies (e.g. hedonics), it appears that BLS statisticians are not entirely free from influence by external parties (academia, politics).

The information needed to set up the samples is obtained from the Census Bureau. The BLS has not much opportunity of judging the quality of that sample and of exerting influence on how those sources of information are shaped.

Revisions are made only where real errors have occurred in the calculation or where the revision would lead to changing the result by more than 0.2 percentage points. That rule has been in place since 1950 and has not been modified since. Such revisions are very rare.

#### *Timeliness and punctuality*

The index is published two weeks after the end of the reference month (as it is for the HICP), and another three weeks later further subindices and a monthly analysis of U.S. price movements are available. No flash estimates are calculated.

#### *Clarity and accessibility*

There is a good transparency and accessibility of the data and the description of methods and other background information. The BLS attaches utmost importance to giving its own comments on the results.

#### *Comparability*

The CPI is more or less comparable with the HICP of the EU. Nevertheless the index is not produced for all 50 states but just for 14 urban regions in the USA that cover about 87% of the population. For half of those regions, indices are calculated only every two months.

#### **Observation**

The resources in terms of manpower and funds available for producing the CPI are tremendously larger than those used for similar calculations in European Union Member States. This is important comparing quality adjustments. Timeliness is more or less the same for EU and US indices.

## **2.7 INDUSTRIAL PRODUCTION AND CAPACITY UTILISATION (BY BENTE DYRBERG)**

### **General remarks**

The FED is independent, but is nevertheless obliged as a compiler of principal federal economic indicators FED to submit every three years a performance evaluation to the OMB.

The FED staff for the compilation of these two indicators is quite limited. Five persons work regularly on the IP indicator, but when benchmarking this indicator the staff goes up to 10-15 persons. The CU indicator is compiled by two persons. It should not be forgotten that the different regional FEDs contribute to the production of these indicators, mainly through the collection of data. However, the FED buys data also from private sources ( for around 300.000 \$).

Before every release the IP/CU team meets the Board of Governors to comment on their indicators.

The FED indicators are used mainly by those demanding a very quick indicator. It is therefore one of the first indicators out. However, the CB does not use the FED indicators in the compilation process for its monthly indicators on Manufacturing Shipments, Orders and Inventory, nor does the BEA use them for its QNA.

### **INDUSTRIAL PRODUCTION (IP)**

The FED compiles its IP indicator since 1922. The index measures real output and is expressed as a percentage of real output in a base year, currently 1992. The IP is computed as an annually weighted Fisher index since 1977; the weights are based on annual estimates of value added.

#### **Indicator quality**

##### *Timeliness and punctuality*

The first monthly output estimate is published around the 15th of the following month. The estimate is preliminary and subject to revision in each of the subsequent three months as new source data become available. After the fourth month, however, the indices are not revised anymore until the time of an annual or a benchmark revision. The last three benchmark revisions were conducted in 1990, 1985, and 1976. The next one will take place in 2001.

The IP indicator is one of the quickest economic indicators. Only the National Association of Purchasing Managers with its index and the BLS with its Employment indicator are faster.

##### *Accuracy*

There are minor revisions from month to month. Especially for the first and second estimates for a given month, the available source data are limited. Annually or benchmark revised IP indicators are constructed from a variety of source data such as the Annual Survey of Manufacture and the quinquennial Census of Manufacture.

There is, however, an increasing discrepancy between National Accounts and IP, most likely due to an IP underestimation. The IP indicator is also smoother than comparable production indices from other countries. Seasonally adjusted series are corrected every month.

The average revision at the level of the overall IP index, without regard to sign, between the first and the fourth estimates was 0.28 percent during the 1987-98 period. In most cases (about 83 percent), the direction of change in output indicated by the first estimate for a given month is the same as that shown by the fourth estimate.

### *Contents*

The IP covers manufacturing, mining, and electric and gashouse industries. IP does not cover construction and services, which are found very difficult to estimate. Since 1992 the index has been constructed from 267 individual series based on the 1987 Standard Industrial Classification (SIC). Individual series are seasonally adjusted by the X-11 ARIMA method every month.

### *Coherence*

The IP indicator is benchmarked to the Annual Survey of Manufacturing and the quinquennial Census of Manufacture (both from CB). It will be difficult to benchmark this year because of the switch to NAICS. Monthly Manufacturing Shipments, Orders and Inventory from CB are used for comparison purposes only. The methods are too different. The activity classification is different from the European NACE.

### *Clarity and accessibility*

The FED disseminates its indicators on paper and electronically through the Internet ([www.federalreserve.gov](http://www.federalreserve.gov)). Release dates and documentation are found on the Internet.

### **Data sources**

The IP is compiled from two main types of source data: (1) output measured in physical units and (2) data on inputs to the production process.

Data on physical products, such as tons of steel or barrels of oil, are obtained from private trade associations as well as from government agencies; data of this type are used to estimate monthly IP where possible and appropriate. When suitable data on physical product are unavailable, estimates of output are based on production-worker hours. Data on hours worked by production workers are collected in the monthly establishment survey conducted by the BLS. Electric power usage by industry is drawn upon for the second estimate.

Physical output is estimated from an array of different sources, mostly on a voluntary basis from (large) private companies or associations: e.g. motor vehicle production and sales, manufacturing of home appliance. Physical output series are rather volatile, while hours worked series are more stable.

The FED uses almost same sources as the BEA for its GDP compilation. However, the FED compiles its own deflators, e.g. for pharmaceutical products considered to be more appropriate than the PPI from the BLS or for land equipment. The FED considers that more work is needed most notably on communication and wholesale market.

## **CAPACITY UTILISATION (CU)**

The FED started to publishing its CU in the 1950s. Capacity utilisation is calculated for the manufacturing, mining, and electric and gas utilities industries. For a given industry, the utilisation rate is equal to an output index divided by a capacity index. Output is measured by the seasonally adjusted IP indicator. 15% of the indicator is based on information about physical units and 80% on information from an annual survey on plant capacity conducted by CB for FED for some 425.000 \$ per year. In this mandatory survey 66.000 plants are questioned in the 4th quarter. To calculate the monthly CU index, the FED forecasts the investment. This leads to an updated capital stock from the new capacity can be derived. From the IP indicator the CU is then calculated. For a detailed description of methods see [www.federalreserve.gov/releases/G17/cap-notes.htm](http://www.federalreserve.gov/releases/G17/cap-notes.htm).

### **Indicator quality**

#### *Accuracy*

The revision process is similar to that of the IP. Only small revisions are made from the initial figures for a month to the final figure is published 2-3 years after the initial release. These revisions are smaller than the revisions for IP.

## **2.8 QUARTERLY NON-FINANCIAL AND FINANCIAL SECTORAL ACCOUNTS (INCLUDING THE GOVERNMENT SECTOR) (BY WERNER BIER)**

### **General remarks**

The FED and the BEA are responsible for compilation and publication of quarterly non-financial and financial sectoral accounts (including the accounts for the government sector). While flow of funds accounts (FFA) are published by the FED the national income and product accounts (NIPA) are published by the BEA. The very detailed FFA can be viewed as combining data on the flows of saving and non-financial investment published in the NIPA with additional details on financial investment and external financing of economic sectors. Otherwise, the scope of the NIPA focuses on activity related to current production and income. No full sectoral accounts are compiled for them as outlined in the document on “National Accounts and Balance of Payments”, which is the case in the framework of FFA for the capital, the financial transaction the financial balance sheet accounts.

The maintenance of consistency is seen as important between the capital account data published in the framework of FFA and NIPA (including BOP). However, there is no regular procedure to reconcile in detail the quarterly data between the two institutions. Otherwise, the discrepancies between the capital account figures

published by the FED and the BEA are described in detail. They are due to different data classifications and documented in various reconciliation tables. From the FFA point of view the data on national saving and capital expenditures from the NIPA are seen as the starting point for the compilation of the sectoral capital accounts by the FED.

## **Indicator Quality**

### *Content*

The flow of funds (financial transaction and capital) accounts measure the net acquisition of non-financial and financial assets throughout the U.S. economy and the sources of funds used to acquire the assets. They may result from (1) the current transactions in the economy, (2) the allocation of saving between investment in non-financial and financial assets, and (3) the decisions to change the composition of financial assets and liabilities. The FFA and the related sector balance sheets summarise how current investment in non-financial and financial assets contributes to a build-up of the stock of assets for each sector of the economy and to the creation of national wealth.

In the accounts, the economy is divided into thirty sectors. The non-financial corporations group, for example, is made up of three sectors. This group, together with households, non-profit institutions serving households, and state and local government, excluding employee retirement funds, form the domestic non-financial non-federal group; the federal government is added to obtain the domestic non-financial sectors. Debt of these sectors is monitored on a monthly (and partly weekly) basis by the FOMC as one indicator of the effect of monetary policy. Financial corporations are split into 23 sectors covering four banking sectors, saving institutions and credit unions, but also numerous types of funds, trusts and insurance companies. Retirement funds for state and local government employees constitute a separate financial sector, although state and local government themselves belong to the non-financial sectors. The rest of the world sector is also added.

A large number of instrument categories (51) is covered in the FFA which are grouped into monetary reserves, deposits and federal funds, inter-bank transactions, credit market instruments, equity issues, insurance and pension fund reserves, other claims and discrepancies.

The U.S. program to produce FFA is over fifty years old. A set of annual financial accounts was first published in 1955, and data showing quarterly flows have been available since August 1959. At the present time, the FFA publication reflects a full set of financial accounts for the whole economy, with quarterly data beginning in 1952 for both financial flows and end-of-period amounts outstanding. The accounts are presented in an official statistical release of the FED (Z.1). Each sector table shows gross saving and gross investment, with detail for capital expenditures and changes in financial assets and liabilities, and end-of-period outstandings.

Annual balance sheets for non-financial corporations and households including non-profit institutions serving households are included in the FFA publication combining non-financial and financial assets with liabilities to derive statements of net worth. Corresponding reconciliation tables (other changes in the volume of assets and

holding gains and losses) are also published. Balance sheets for other sectors of the economy and quarterly estimates of balance sheets are estimated for internal use.

### *Timeliness and frequency*

The FFA are typically published nine to ten weeks after the end of the quarter. By that time a sufficient number of data sources is available for estimating financial transactions and amounts outstanding for the current quarter. Previously published quarterly estimates may be revised with each publication, using any new information that has become available. In addition, structural changes resulting from new estimation procedures or changes in financial markets may be incorporated into the accounts.

With preparation of second-quarter statistical release in September, the annual revision of the NIPA, which usually is published in July and typically covers the data for the preceding three years, and the annual revision of the balance of payments accounts are incorporated. Also, at this time, the seasonal factors for the latest ten years are re-estimated.

Quarterly financial transactions are presented at seasonally adjusted annual rates, while amounts outstanding are shown on a non-seasonally-adjusted basis. Seasonal adjustments are based on X-11-ARIMA/88 developed by Statistics Canada.

### *Transparency*

The methods used in compiling the sectoral quarterly accounts are very transparent. Sources and methods underlying the quarterly estimations are described in detail like in the Guide to the Flow of Funds Accounts published recently by the FED and in various working papers. Data revisions and other changes are described and explanatory notes are provided in the quarterly Z.1 statistical release ([www.federalreserve.gov/releases/Z1](http://www.federalreserve.gov/releases/Z1)).

### **Data sources**

No regulation is foreseen for the collection of FFA data. Furthermore, almost no information is collected specifically for the FFA. Rather the compilation of data relies on a wide variety of central bank, government and private sources of data, with varying frequency – from monthly to annually. The lags in availability of the sources also vary, ranging from one day to two and one-half years after the period reported.

Regulatory reports include several sources of data required for certain types of institutions like banks or security brokers and dealers. Other data sources are tax reports. Because all businesses are required to file, the aggregate data derived from the large samples of income tax returns of non-financial corporations, partnerships, and sole proprietorships provide a good benchmark. Other institutions like private pension funds or non-profit institutions must file specific annual forms.

Other sources are related to surveys conducted by the FED and the Federal Reserve Banks that provide estimates for data in the FFA like for consumer credit, for finance companies to obtain estimates on their asset and liability positions. Every three years the FED also sponsors a survey of over 4,000 households, the Survey of Consumer Finances.

Various government units supply data on federal government borrowing and lending (U.S. Treasury), on mortgage loans (Department of Housing and Urban Development) or on state and local government (Department of Commerce).

Data on mutual funds or credit unions are taken from their trade associations. Furthermore, data collected by rating agencies are also used like from A.M. Best Company (insurance), Standard&Poor's Compustat Services, Inc. (other financial intermediaries). Other private sources cover data on real estate investment trusts, collateralised mortgage obligations, and issuance of bonds and equity.

## **Main observations**

- Early quarterly publication of full sets of sectoral accounts nine to ten weeks after the end of the quarter (Z.1 statistical release);
- Detailed instrument breakdown of quarterly FFA for thirty sectors, including federal government, state and local government, and retirement funds for state and local government employees;
- Previously published quarterly estimates may be revised with each publication, using any new information that has become available for these back periods;
- Monthly debt aggregates used for monetary policy purposes are based on FFA data (H.6 statistical release, “Money Stock and Debt Measures”);
- Annual balance sheets for non-financial corporations and households including non-profit institutions serving households included in the FFA publication combining non-financial and financial assets with liabilities to derive statements of net worth;
- Corresponding reconciliation tables (other changes in the volume of assets and holding gains and losses) are also published;
- Balance sheets for other sectors of the economy and quarterly estimates of balance sheets are estimated for internal use;
- Sectoral capital, financial transaction and financial balance sheet accounts data compiled in the EU are mostly compiled less frequently (in general annually, partly quarterly), released less timely (after four to twelve months), and published with less sector and instrument detail than in the U.S.
- Forthcoming regulations related to non-financial and financial accounts data of the government sector will improve considerably the availability of high-frequency data sources to compile quarterly sectoral accounts in the EU.