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EUROSTAT NEWS

24th CEIES seminar

'The size of the government sector – how to measure'

Vienna, Thursday 23 and Friday 24 October 2003

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1st day
23 October 2003

09:00 **REGISTRATION**

09:30 **OPENING SESSION**

Welcome to the participants:
Mr J. Lamel, Vice-chairman of CEIES
Mr E. Kutzenberger, Director General of Statistics Austria

Opening address:
Mr D. Glatzel, European Commission, Economic Statistics and Economic and Monetary Convergence, Eurostat

10:30 **1. INTERNATIONAL VIEWS**

Mr K. Dublin, International Monetary Fund
Mr R. Mink, European Central Bank

11:15 - 11:45 Coffee break

11:45 **OPEN DISCUSSION**

12.30 - 14.00 Lunch

14:00 **2. MEASUREMENT ISSUES**

CHAIR: MR D. BRÜMMERHOFF, UNIVERSITY OF ROSTOCK, GERMANY

KEYNOTE SPEECH

Mr R. Hjerppe, Government Institute for Economic Research, Finland

14:30 **A) TECHNICAL ASPECTS**

Data Concepts and Production

Mr J. Verrinder, European Commission, Eurostat
Ms L. Vebrova, Czech Statistical Office, Czech Republic

15:15 - 15:45 Coffee break

15:45 **OPEN DISCUSSION**

16:15 **International Comparison**

Mr E. Hoffmann, International Labour Organisation
Mr M. Ladaique, OECD

17:30 **END OF FIRST DAY**

18:30 **SOCIAL EVENT**

THANKS IS GIVEN TO STATISTICS AUSTRIA FOR THE SOCIAL EVENT

2nd day
24 October 2003

09:00 **2. MEASUREMENT ISSUES**
A) TECHNICAL ASPECTS (CONT.)

CHAIR: MR D. BRÜMMERHOFF, UNIVERSITY OF ROSTOCK, GERMANY

International Comparison (cont.)

Mr A. Pritchard, Office for National Statistics, United Kingdom
Mr S. Sergeev, Statistics Austria

09:45 **OPEN DISCUSSION**

10:15 - 10:45 coffee break

10:45 **Analysis**

Mr B. Kuhry, Social and Cultural Planning Office, The Netherlands
Mr W. Schönbäck and Mr J. Bröthaler, Institut für Finanzwissenschaft und Infrastrukturpolitik, Technical University of Vienna, Austria

11:30 **OPEN DISCUSSION**

12.30 – 14.00 Lunch offered in the self-service of Statistics Austria

14:00 **2. MEASUREMENT ISSUES**
B) POLITICAL ASPECTS

CHAIR: MS K. SIUNE, DIRECTOR, THE DANISH INSTITUTE FOR STUDIES IN RESEARCH AND RESEARCH POLICY

Ms G. Csonka, Ministry of Finance, Hungary
Ms R. Meier, Swiss Federal Statistical Office
Mr M. Ward, UN Intellectual History Project

15:00 **OPEN DISCUSSION**

16:00 - 16:30 coffee break

16:30 **Summing up by the Working group responsible for the organisation of the seminar**
Mr A. Franz, Scientific Adviser, Austria

16:50 **Reaction from Eurostat**
Mr D. Glatzel

17:10 **Closing remarks**
Mr J. Lamel, Vice-Chairman of CEIES

END OF THE SEMINAR

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Background and aim of the seminar

One of the features of today's economies is the outstanding importance which "government" has assumed after all. In the EU, for example, the share of government in GDP is now nowhere less than the UK's 10%, and in Scandinavia it can be as high as a quarter (Sweden: 26%). But what *is* "Government"? What is its role in the economy? What kind of statistics on it are readily available? What can be learnt from such figures? Are they comparable? What must be taken into account when using them? The considerable degree of standardisation and sophistication so far achieved may at the same time be an indication of the difficulties, ambiguities and pitfalls still troubling the producers as well as the users of such data.

The questions involved are clearly a matter of more than mere curiosity. They have recently attracted major interest in the context of the Maastricht Treaty and the Stability and Growth Pact, with its explosive power inherent in the Excessive Deficit Procedure (EDP). Apart from such topicality, however, meaningful, understandable and well comparable figures on "Government" are needed. It is appropriate, therefore, to consider the subject a little more closely, particularly in terms of the prerequisites of comparison in the context of the EU, as the obvious main concern of such endeavour. Present statistics on government are the obvious starting point, therefore.

What is CEIES?

CEIES stands for *Comité consultatif européen de l'information statistique dans les domaines économique et social;* in English: 'The European Advisory Committee on Statistical Information in the Economic and Social Spheres'. Its task is to assist the Council and the Commission in the co-ordination of the objectives of the Community's statistical information policy, taking into account user requirements and the costs borne by the information producers.

The committee was set up by Council Decision 91/116/EEC of 25 February 1991. The original decision was amended by Council Decision 97/255/EC of 19 April 1997 taking into account the accession of Austria, Finland and Sweden.

CEIES is chaired by the Commissioner responsible for statistics, currently Mr Pedro Solbes Mira. The vice-chairman is Mr Joachim Lamel, from Austria. CEIES is composed of two private members per Member State, three members from the European Commission, the Chairman of the Committee on Monetary, Financial and Balance of Payments Statistics (CMFB) and the Presidents or Directors-general of the National Statistical Institutes of the Member States.

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CEIES Secretariat*: Ms Annika Näslund-Fogelberg, Ms Nicole Lauwerijs, and Ms Deborah Evans*

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24TH CEIES SEMINAR

"THE SIZE OF THE GOVERNMENT SECTOR: HOW TO MEASURE"

BACKGROUND PAPER

Alfred Franz, Scientific Advisor and Author of the Background Paper
E-mail: alfred.franz@chello.at

1. One of the features of today's economies is the outstanding importance which "government" has assumed after all. In the EU, for example, the share of government in GDP is now nowhere less than the UK's 10%, and in Scandinavia it can be as high as a quarter (Sweden: 26%). But what *is* "Government"? What is its role in the economy? What kind of statistics on it are readily available? What can be learnt from such figures? Are they comparable? What must be taken into account when using them? The considerable degree of standardisation and sophistication so far achieved may at the same time be an indication of the difficulties, ambiguities and pitfalls still troubling the producers as well as the users of such data.

2. The questions involved are clearly a matter of more than mere curiosity. They have recently attracted major interest in the context of the Maastricht Treaty and the Stability and Growth Pact, with its explosive power inherent in the Excessive Deficit Procedure (EDP). Apart from such topicality, however, meaningful, understandable and well comparable figures on "Government" are needed. It is appropriate, therefore, to consider the subject a little more closely, particularly in terms of the prerequisites of comparison in the context of the EU, as the obvious main concern of such endeavour. Present statistics on government are the obvious starting point, therefore.

A Few Preliminaries

3. There is no straightforward statistical answer to the question of the size of government. Granted a broad and varied scope of genuine competences, government may either pursue those functions itself or impose related responsibilities on society. There is broad agreement that this universal level escapes statistical review. Even then the approaches differ, for operational reasons restricted to the government's own activities, depending on the points of reference addressed:

   - the variety of the instruments related to these competences; and/or

   - the range of the capabilities of their implementation.

Accordingly, starting from the potential of the original remit granted by the law, studies may highlight the related actual use of economic resources by the government's own agencies, or the very outcome of those activities, each with probably quite different results. This is a wide range of investigation, which may cover simply legislation, downright empirical subjects or even more sophisticated ("qualitative") issues.

4. Otherwise the comparison may be based on mere normative (legalistic) criteria, e.g. contrasting more or less comprehensive budgetary figures as found for individual governments in each case. However, for the purpose of international comparison an additional, perhaps more meaningful convention can be suggested which may help attain some systematic, general standard of comparison. A common basis of reference is determined beforehand of the subject(s) to be compared, whether in terms of the "highest common factor" or of the "lowest common multiple", or some combination of them (as in the National Accounts). The technical means are delineations in terms of classification standards, qualifications on the statistical units and transactions, and the like. However, in any case of a common factor the outcome will be some artificial construct that is not reflected one-for-one in any of the countries compared — the price to be paid for achieving comparability (and thus not unlike the situation in index statistics).

5. In addition, more formal adjustments are usually needed to achieve an entire gross basis of the accounts:

   - certain steps of related computations are as such no longer explicitly reflected in the official records. Most prominent are the items offset during the procedure of taxation;
   - internal accounting settlements occur between the different branches of government, which are cancelled out in the official records by way of consolidation.

Above a certain level such practices are clearly relevant for the comparison and must accordingly be reconstituted.

6. In other words it may be concluded that there is a need for harmonisation as regards the functions of government, as regards the agents involved, and as regards accounting. Within these limits, and in a dynamic world, interest may concentrate on changes over time, due to the shifts taking place from the public to the private sector (business; households) and vice versa. Such developments are now often being found as "outsourcing", "contracting out", "private-public-partnerships" (PPP), and even outright "privatisation". At present, the first thing to be diagnosed about these developments may be a lack of statistics.

Sources and Reference Frameworks

7. For various reasons the National Accounts (the SNA, with the European System of Integrated Economic Accounts – ESA – as the EU version) have assumed a dominant role here. In this system the government sector holds an important position both in terms of the concepts elaborated and the analytical potentials. Unfortunately, current National Accounts data on government do not invariably seem yet to meet this principal claim: insufficient breakdown of agents with regard to variations in their economic nature; insufficient detail of functions with regard to their ways of implementation; insufficient mutual congruence when dealing with borderline cases, due to persistent ambiguities in standards and consequent arbitrariness in practical decisions. In addition, certain insensitive if not mechanistic standards may in practice result in incomparability rather than harmonisation.

8. However, in two respects the role of the National Accounts is undoubtedly as useful as ever (if not indispensable):

   - to overcome the different sizes of the comparing countries, the National Accounts provide the "Main Aggregates" as a convenient means of standardisation, in particular in terms of "share in GDP";
   - beyond that, the National Accounts still provide an excellent conceptual structure to organise a wealth of information in a comprehensive, systematic way.

The requirements of good government comparison are reflected here in numerous particulars if not ad hoc solutions, and often worthy of fresh discussion.

9. Further sources to be quoted in this context are the standard systems of the IMF, viz. the Government Finance Statistics (GFS) and the Special Data Dissemination Standard (SDDS); the Tax Revenue Statistics of the OECD; and the European / International Comparison Project (ECP/ICP). In each of them similar defi-

ciencies can be found. However, despite certain limitations already described, it should be acknowledged here that, thanks to the new great standard systems (SNA/ESA; GFS), significant progress has been made compared with the past.

Indicators to be proposed for further investigation

10. Various indicators may be used in order to comprehensively describe "government", usually apostrophised as indications on the "size" of government ("government ratios" of any kind):

    (a) Budgetary volume (Total Income or Revenue/Total Expenditure) ratios

    Such NA/GFS based definitions may be most significant to identify the overall role of the Government in the economy. Obviously, they require further adjustment for international comparison, thus determining and/or accommodating other, more specific ratios, such as Tax or Deficit/Debt to GDP (cf. (c) below).

    (b) Government Deficit to GDP ratio; Public Debt to GDP ratio

    Such more specific ratios have become particularly relevant only recently as a result of requirements of the Maastricht Treaty and the subsequent Stability and Growth Pact, and its Excessive Deficit Procedure. While now largely standardised by the related new Manual on the ESA 1995: Government Deficit and Debt, questions may be raised about degrees of freedom in the design of the national arrangements underlying even formally consistent, compliant figures.

    (c) Tax ratios

    The questions here are basically twofold:

    - which preliminary (i.e. assessment internal) nettings have to be taken into account?
    - what is the right reference basis (in terms of "share")?

    The respective adjustments relate to both the expenditure side and the revenue side, of course. Insofar as taxes may be withheld from social transfers (see (d) below) another adjustment may be suggested, too, but in this case working in the opposite direction. Further, Social Security (SS) schemes operated outside the government but otherwise mandatory may also be included, if we are to have real comparability.

    (d) Transfer ratios

    Similarly to tax ratios, the ratios of government transfers paid are of interest (social transfers, in particular). Data according to the ESSPROS scheme are a special case in this respect.

    (e) (Net) Output / Production ratio of Government

    Delineation of the scope of government becomes particularly important here, with the application of the much debated "50% criterion" as the probably most important issue. Analogous calculations for the Employment part (with obvious requirements of congruence to related monetary reference).

11. However, while certain topics clearly influence the indicators (ratios) of the above kind, others deserve our interest in their own right, because of the specific circumstances of their existence, or with regard to a more sophisticated observation/data collection, or for their particular analytical significance. The necessities of adaptation to achieve comparability of taxes and social transfers or the developments on the part of shifting sector delineations are important examples of this kind, often dealt with irrespective of more comprehensive investigations but with disproportionate implications at high levels detail.

Conclusions & Outlook

12. For international statistical comparison of the "size" of "Government" the state of the "sources" is still a problem. That judgement applies to a certain degree even to the conceptual standards, but above all to their application when compiling the data. Critical review, even with a view to subsequent adaptation, would therefore seem to be appropriate, in the following major respects:

- General/theoretical points of concept and comparison (principal criteria of delineation; reference points or levels of analysis; basis /common denominator(s)/ of comparison; §§ 3 - 6)
- System- (ESA etc.) specific points of concept and comparison (technical questions of identification; borderline areas; appropriateness of present standards; §§ 7 - 9)
- Practical (empirical) exercises whether of a more comprehensive or a more detailed kind (with exemplary quantification and/or systematic comparison; §§ 10, 11)

13. As usual, the seminar's discussions will be supported by a number of invited papers. On that basis it should be possible to achieve a more or less comprehensive review of the concerns discussed in the foregoing paragraphs, whether it is inspired by pertinent theoretical research or by difficulties and complaints concerning the use of such figures and the ultimate consequences in operational terms. On that basis the achievement of common conclusions and the formulation of a couple of recommendations may be attempted.

Participants

A total of about 80 people are expected to attend the seminar: data users and data producers from the European Institutions, national/regional administrations of EU, Candidate and third Countries, from international and national organisations and associations, from the private sector and the research world. Invitations will be taken care of by CEIES. All papers will be circulated to the participants in advance via Internet, at the following address: http://forum.europa.eu.int/Public/irc/dsis/ceies/library.

Organisation

The seminar will take place under the auspices of the 2003 programme of the CEIES and will be jointly sponsored by the CEIES and Eurostat.

The seminar will be held on 23 and 24 October 2003 in Vienna, Austria, at the premises of Statistics Austria.

Simultaneous interpretation will be provided from/to English, French and German.

Proceedings

The seminar proceedings will be published in the form of a Eurostat publication, within the series "Studies and Research": CEIES Proceedings of the 24th seminar.

Questions?

For any **technical** questions concerning the content of the seminar, please contact:

Mr A. Franz, Scientific Advisor and author of the background paper

E-mail: alfred.franz@chello.at

For **administrative**/**organisational** matters, the CEIES Secretariat will be happy to answer any questions that you may have.

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CONTENTS

The proceedings are a collection of papers prepared by the speakers in advance of the seminar. They do not include the open discussions nor the discussions in the round table/panel session.

The papers presented and published herein only represent the views of their authors and do not necessarily reflect an official position of their institutions or organisations.

THE SIZE OF THE GOVERNMENT SECTOR – HOW TO MEASURE
OPENING ADDRESS

Dieter Glatzel
European Commission, Eurostat

Good morning ladies and gentlemen. For those of you who don't know me, I am Dieter Glatzel, the Head of Unit at Eurostat with responsibility for "Accounts and Financial Indicators, and statistics for the Excessive Deficit procedure". My unit collects and disseminates financial accounts and most statistics on general government within the European Statistical System. I am standing in for Bart Meganck, who unfortunately has some urgent business elsewhere today.

Before launching into the topic at hand, I would like to echo the thanks to Statistics Austria and to Alfred Franz for helping us to organise this seminar. It is good to see so many people in attendance.

When I and my colleagues look at my email in-tray and references to Eurostat in the press, one of the most constant issues we find is the Excessive Deficit Procedure, and the government debt and deficit statistics that are used for it. I know here in Austria (and in most other countries) the press and many politicians have learned that Eurostat exists through this one issue; though other recent events have somewhat heightened my organisation's profile!

But the issue of the size of the government that we are discussing here goes much wider than government debts and deficits. It reaches into our understanding of how a (hopefully) self-imposed authority can impact on our lives, not just economically but also socially and culturally. I hope we will spend some significant time on these aspects, which I think fully merit a fuller discussion than they usually receive.

One possible way to look at this, as described in the excellent overview paper for this seminar, is to use the "bottom-up" approach – how do groups of people organise their collective life and what governance structures have they chosen? The economics textbooks come up with a variety of explanations on why governments exist, the most common of which is that a group of self-interested economic agents will normally reach a sub-optimal solution to any problem involving the provision of public goods, in the absence of perfect information. Therefore government is needed to lead people to a more optimal solution.

With the advent of the concept of the Welfare State, the role of government has relentlessly expanded, especially in areas such as health, education, social protection, market regulation and protection of the environment. We have even developed supra-national governments to deal with finding more optimal solutions at international level. But in recent years, we have seen many governments freeing certain controls (eg. exchange controls, border controls) and privatising state-owned industries. Analysing this two-way traffic is one challenge for us over the next two days.

Perhaps at the start of this seminar we should reflect on the word "size" in the title. We could take two possible interpretations – a "physical" interpretation (in terms of money, people, infrastructure, etc) and an "impact" interpretation (how much does government influence citizens and corporate entities).

These may be two very different things – indeed, some governments may be more efficient than others, some governments may use more regulation than others, some governments may rely more on the private sector to deliver some public services. I know that certain countries in Europe, for example the UK and Denmark, have been establishing performance measures for government which aim to measure outcomes of government activity, as well as outputs and inputs used to achieve them.

Another issue to consider is the availability of data on "size" and "localisation" of government. There has been a consistent trend in many countries towards decentralisation. "Taking government closer to the citizen" is one slogan used. But what types of statistics are appropriate to capture decentralisation? How should we present them?

A challenge that presents itself to statisticians in the context of sometimes far-reaching reform of national governance structures in recent years is the shift of emphasis from top-down policy development to more "participatory" involvement of civil society, including closer consultation of lobbying and interest groups. How can we statistically capture aggregate change in policy development methods and its impact on society? Is it enough to simply measure changes in related allocations of public resources?

Another issue that may change our traditional methods of measuring the size of government is the changing nature of public service delivery. As an increasing number of agencies providing public services are being privatised or replaced by private sector providers, one must ask oneself whether the privatisation of service delivery itself warrants re-classifying providers to the private sector. Indeed, would some of them exist without having been given a sometimes monopolistic government mandate? Given that frequently all of their assets, liabilities, and outputs are in existence solely because of instructions given by government, does that mean that all of these should be classified in the private sector? Also, can we be certain that we have sufficiently transparent data to track aggregate stock and flow changes resulting from a new legal and economic status of public service providers?

Last, but not least, we should think about the process by which data on government is compiled. When statistics become highly politically relevant, we must always be vigilant that standards and statistical independence are maintained. The mechanisms by which we do this are important, so that we can re-assure users of the statistics. Where statistics are used as political footballs (for example, I can think of the tax burden issue coming up for heated discussion in most countries around election time), we should be able to say "the answer is this, not that" and have impeccable arguments to defend our position.

We also need to ensure that the importance of reliably and comprehensively collected statistical data is known at all levels of government, especially at the sub-national level where awareness of the relevance of statistical data to policy making may not be as high as at a central government level. While national statistical institutes continue to make valiant efforts to educate and train their colleagues at local and regional government level in data collection and processing methods, we are still finding significant differences in the quality of data at the various levels of government.

This in turn impacts upon the reliability of measurements used to determine the size of the public sector. Keeping the skills of statisticians at all levels of government up-to-date is therefore a continuing challenge, especially in these times of fiscal austerity in many Member States.

Having said all this, I hope that by tomorrow afternoon, this seminar will have addressed the following questions, not only to further elucidate the question of how best to measure the size of government, but also to give some suggestions to us at Eurostat and to NSIs on the scope for further research in this domain. Some of the questions that I hope to hear mentioned in our debate are:

- How do we define "government"?
- Which aspects of government activity are currently captured in official statistics?
- What are the problems with existing official statistics on government?
- Which activities of government are perhaps not captured?
- Are certain measures of the size of government better than others?

The debate on the size of government (as opposed to the financing of government) has always been more acute in the United States than in Europe. There passions run very high, particularly on the side of the government downsizers. To finish I thought I would share with you two striking quotes which illustrate the strength of feeling:

"Giving money and power to government is like giving whiskey and car keys to teenage boys" from P J O'Rourke, and

" A government that is big enough to give you all you want is big enough to take it all away" from Barry Goldwater

I wish you two stimulating days of discussion!

MEASURING THE SIZE OF THE PUBLIC SECTOR: WHAT DOES THE IMF'S GOVERNMENT FINANCE STATISTICS MANUAL 2001 CONTRIBUTE?

By Keith Dublin, John Pitzer, and Ethan Weisman
International Monetary Fund

Introduction

1. There is no generally accepted statistical measure of the size of government suitable for all types of economic, social, and political analyses. Total government expenditure is commonly used, but probably because of the easy availability of data rather than appropriateness of the concept. Depending on the purpose of the analysis, a different measure, such as assets owned, final consumption expenditure, or a combination of several measures, may be more appropriate. In some instances, the analyst may need to focus on the broader public sector rather than the general government sector.

2. Measures of the size of government usually are expressed relative to the size of the economy rather than as an absolute number. Thus, an integrated system of government statistics that is harmonized with the national accounts would provide an appropriate framework to measure the size of government. The recently published *Government Finance Statistics Manual 2001 (GFSM 2001)*[1] meets these requirements by providing an integrated and systematic statistical recording of government economic activities that is harmonized with the *System of National Accounts 1993 (1993 SNA)*.

3. The intent of this paper is to demonstrate that the *GFSM 2001* provides a framework where various measures of government economic activities can be studied in a systematic way. The paper begins by identifying the economic roles of government (Part I), followed by a review of the literature concerned with the size of government (Part II). Part III describes the accounting structure of the *GFSM 2001* and how it is harmonized with *1993 SNA*, providing a systematic recording of government economic activities within the overall economy. Part IV demonstrates the usefulness and rich potential of the *GFSM 2001* statistical framework, by presenting a number of measures of the size of government that can be derived from these statistics.

A. The Economic Roles of Government

4. The principal economic functions of a government are to: (1) redistribute income and wealth by means of transfer payments, and (2) assume responsibility for the provision of goods and services to the community on a nonmarket basis, either for collective or individual consumption, financing these activities primarily by taxation or other compulsory transfers (*1993 SNA*, paragraph 4.104). While these functions describe what governments do, the economic literature explains why governments engage in these two types of activities, providing a more complete understanding of the economic roles of government and its size.[2]

[1] The manual is also available at http://www.imf.org/external/pubs/ft/gfs/manual/index.htm.

Keith Dublin and Ethan Weisman, are Chief and Deputy Chief (respectively) of the Government Finance Division (GFD) in the IMF's Statistics Department, and John Pitzer was a consultant to this division when the paper was prepared. The paper benefited from comments by Carol S. Carson, Lucie Laliberté, Anne Kester, and Dimitar Radev. Any remaining omissions and errors are solely the author's responsibility. The views expressed in this paper are those of the author(s) and do not necessarily represent those of the IMF.

[2] Musgrave (1959) and Musgrave and Musgrave (1989) provide excellent surveys of the theory and practice of public finance, including discussions of the economic roles of government. Tanzi (2000) has a comprehensive discussion of the various roles of government and the institutional structure necessary for high quality government.

5. One role of government is to adjust the distribution of income or wealth by increasing, for instance, the equality of the income distribution or by providing a minimum level of income for all members of society. A principal mechanism for altering the income or wealth distribution is through transfers, that is the collection of taxes (negative transfers) and transfer payments by government.[3] Because governments often have a choice of not collecting a tax or making a transfer payment, statistics on transfer payments or total government expenditures may not be a good indicator of the scale of a government's activities (since they do not measure transfers in the form of foregone taxes).[4] Total government expenditures also fail to show the distribution of income and wealth to selected portions of society through (nonmarket) goods and services provided for individual consumption, such as education, health, housing, recreation, and cultural services.

6. Government generally provides goods and services for individual consumption on a nonmarket basis. The government can directly produce such goods and services or purchase them from market producers. While the distribution results may be the same, the method chosen can affect the perception of the size of government.

7. A second role for government is the provision of public goods,[5] which are services provided to the community for collective consumption. Such goods would not generally be provided by markets in the quantity and quality desired by the collective community. Examples are public administration, defense, and public safety services. Public goods are defined by two characteristics: nonexcludability and nonrivalrous consumption. Nonexcludability means that consumers cannot be excluded from the benefits even if they refuse to pay. A producer of national security, clean air, or the services of a traffic light cannot collect a fee from each consumer. Without the ability to charge for the services produced, a private unit will not provide them. Nonrivalrous consumption means that one unit can consume a service without diminishing the amount of that service available for consumption by a second unit. For example, public safety services can be consumed by one unit without diminishing the amount available to be consumed by a second unit. Because the marginal cost of providing these services is zero, in a perfectly competitive environment their market price would also be zero. Thus these services would not be provided by the market; only the government would provide them

8. An extension of the role of governments to provide public goods derives from the responsibility of governments to prevent market failure by maintaining the proper regulatory environment for market participants and to deal with externalities. Often governments set up regulations and the agencies to enforce them to improve the competitive nature of markets and otherwise remove or compensate for imperfectly competitive market behavior. Regulatory activities may involve the provision of public goods, such as enacting environmental protection laws and providing the means to enforce them. Regulation can strongly influence market behavior and compensate for externalities. The costs of regulation for government may be relatively small when compared with its effect on economic behavior; therefore some measures of size may not adequately reflect the full impact of government regulation.

9. Externalities occur when a cost or benefit is not included in the market price of a good. When private actions create externalities, the market has failed to produce a satisfactory result. It is economically beneficial for governments to correct the market result with taxes or subsidies (depending on whether the externality is positive or negative). It is also true that governments create externalities. The provision of individual services, such as education and health, can improve the welfare of the general community as well as the welfare of the individuals consuming the services. Thus, there can be a substantial public good component to government-provided individual goods and services.

10. Other roles now commonly taken on by governments are promoting a high rate of economic growth, maintaining stability in economic activity, and promoting full employment. Depending on the specific objective, a government may fulfill these roles by providing goods and services, making transfer payments, or imposing taxes. Either a small or a large government may be consistent with these macroeconomic objectives.

11. The means by which government fulfills its economic roles overlap. It is rare that a specific transaction can be associated with just one role. In general, however, transfer payments are primarily related to the role of

[3] Taxes are transfer payments. To avoid the cumbersome language necessary to distinguish between transfer payments made by government to other units and those made by other units to government, the term "transfer payments" will be used in this paper only for payments by government to other units and the term "taxes" will be used as a shorthand reference to all compulsory transfers by other units to government.

[4] Taxes foregone are sometimes referred to as "tax expenditures".

[5] Despite the name, most public goods are services in the sense that goods and services are defined in *1993 SNA*.

adjusting the distributions of income or wealth, and the provision of goods and services for collective consumption is primarily related to the role of providing public goods. Regulation and fiscal policies directed to macroeconomic objectives may involve a combination of transfer payments, taxes, or the provision of public goods.

II. Main Themes in the Literature on the Size of Government

12. There are two main themes in the literature on the size of government: analyses of the appropriate size of government and studies attempting to explain the growth of government. Both tend to rely on total government expenditure as the principal indicator of size.

A. The Appropriate Size of Government

13. The question of the appropriate size of government has been debated by economists, political scientists, and philosophers for many years. Musgrave (1996) summarizes some of the literature about the role of government and fiscal theory since the 18th century. While it is generally agreed that governments should be no larger than necessary to carry out the roles assigned to them, societies can choose different roles for their governments, and the conditions in which a country exists may impose differing levels of effort to fulfill the same role.

14. The distribution of income resulting from market forces depends on factor endowments, factor prices, and the initial distribution of wealth. Most societies believe that some redistribution is beneficial, but economics does not have a theoretical basis for determining how much or what type of redistribution should be attempted. Instead, the nature and extent of government redistribution programs must be determined by philosophy, ethics, and the political process.

15. One possible approach is to observe what efforts have been attempted and whether they have been successful. Tanzi and Schuknecht (1995 and 1997) looked at the record of OECD countries and concluded that during roughly 1913–60 governments increased the scale of their redistribution efforts as measured by total transfer payments and a number of social indicators, including the level of primary education and the death rate, improved correspondingly. After 1960, transfer programs have continued to expand, but with little discernible effect on the social indicators, suggesting that the increase in transfer payments has been ineffective.

16. The volume of public goods that a government should provide could be subject to normal demand and supply analysis, if individual preferences for public goods were known. Musgrave and Musgrave (1989) provide an example of this type of analysis. Unfortunately, individuals may have an incentive not to reveal their preferences, and the political process must be used to decide the type, volume, and quality of public goods to supply. Buchanan and Flowers (1975) discuss several voting models, and Gupta and others (2001), and Annett (2002) identify institutional political variables that are correlated positively with the size of government expenditure. For example, Annett finds that the degree of fragmentation in the legislature is related to an increase in transfer payments.

17. Fatás and Mihov (2001) look at the relationship between the size of government and the stabilization of economic activity. The hypothesis is that a larger government will moderate fluctuations in economic activity because its programs will be stable or move countercyclically. Using data for OECD countries and using total expenditures and taxes as two measures of size, they find support for their hypothesis.

18. With respect to long-term growth rates, Ghali (1998) examined the interrelationships of investment, the size of government, international trade, and the growth rate of GDP. Using data from ten OECD countries, he found that the size of government, as measured by total expenditures, is positively associated with growth directly and through effects on international trade indirectly.

19. Hemming, Kell, and Mahfouz (2002) examine the theoretical and empirical record regarding the role of fiscal policy in stimulating economic activity. While much of their work concerns the effect of a government deficit, some of it is related to the size of government expenditures. They find a theoretical basis for positive fiscal multipliers in some circumstances and empirical evidence for positive, but small multipliers.

20. It is well documented that taxes alter individual behavior. Feldstein (for example, 1995 and 1997) has written extensively on the dead weight cost of government, which is an attempt to estimate the cost imposed on society by the level and structure of taxes. Taxes alter the ratio of taxed and untaxed products and activities, and people make different choices than they would in the absence of taxes. As a result, the income of an economy is less than the level that would otherwise occur, and some economic activity does not take place because more leisure is chosen. For example, if the rate of income taxes is raised, people will shift some of their activity so that they will have a larger share of untaxed income and a smaller share of taxed income. This shift of behavior decreases welfare; otherwise the mix of activities would have been selected before the tax rate was increased. Thus, total production decreases, even if all factors of production are fully employed, a cost that needs to be taken into account when assessing the appropriate size of government.

21. The appropriate size of government obviously depends on the social and political environment of the country. Gupta and others (2001) analyze the change in the appropriate size in countries in transition resulting from their change in political system. They used total expenditures and employment as measures of size. In other cases, it is not always clear what the government is. In post-conflict areas, such as Kosovo, it is hard to determine how much government there should be. Moreover, the fact that international organizations act as temporary governments can make it difficult to decide how to define the general government or public sector.

22. The study of government interventions in markets by means of regulation is quite complex and beyond the scope of this paper. Kahn (1988) and Spulber (1989) are two of the basic works on this subject.

B. Explaining the Growth of Government

23. Many investigators have attempted to explain the causes of the long-term increase in the size of government and draw conclusions about what the future might hold. Most of these investigations use total government expenditure as the measure of government size. Gemmell (1993) acknowledges that the proper measure depends on the theory being tested and suggests several other measures of size, such as employment, final demand, asset ownership, resource control, or level of production.

24. However measured, there is general agreement that governments have increased in size. Tanzi and Schuknecht (1995) summarize the broad trends in industrial countries, using total government expenditure as a percent of GDP as their measure of size. From 1870 until World War I (WWI), government expenditure averaged less than 10 percent of GDP and was mostly devoted to providing public goods, but social movements were developing the foundation for a government role in the redistribution of income and wealth. After WWI, expenditures did not return to their prewar level. Instead they increased from an average of about 15 percent of GDP in the 1920s to about 20 percent just before World War II (WWII) as governments developed social security schemes and dealt with the Great Depression. After WWII, expenditures continued to increase as redistribution programs expanded and governments took on the additional roles of promoting high growth rates, stabilizing the economy, promoting full employment, and expanding their regulatory environments. In the 1980s and 1990s total government expenditure in industrial countries averaged more than 40 percent of GDP and the percentage was continuing to increase.

25. To explain the growth in the size of government, Holsey and Borcherding (1997), Saunders and Klau (1985), and Gemmell, for example, summarize many of the theories and the results of some empirical tests. Holsey and Borcherding classify the theories as either apolitical or political. Apolitical theories assume the government is a neutral actor attempting to maximize consumer welfare. It intervenes in the economy when there is market failure or a community desire to redistribute income or wealth. Political theories assume government activities result from the self-interest of people and organizations attempting to gain benefit from the government.

26. Wagner (1883) proposed one of the original apolitical theories of the growth of government, suggesting that the income elasticity for publicly provided goods was greater than one. Under this theory, as real per capita income increases the demand for public goods, either produced by government or purchased from market producers, would increase even faster.

27. Baumol (1967) suggested that an economy can be divided into technologically progressive activities and activities that by their nature would have little or no increase in productivity, with government-provided

services part of the latter group. The result is that the relative cost of government services would increase over time and government expenditures would have to rise as a percent of GDP just to maintain the current level of services.

28. A growth in population should provide some economies of scale because of the nonrival nature of public goods, but should also increase the demand for the services because they become cheaper on a per capita basis. Borcherding (1985) found these effects offset each other in their effect on total government expenditure. North (1985) theorized that increasing specialization and higher rates of labor participation can lead to a demand for government to provide services that previously were produced by households.

29. The political theories center on rent-seeking motives, as people attempt to manipulate government activity to favor themselves at the expense of others. Buchanan, Tollison, and Tullock (1980), Buchanan (1975), and Tullock (1970) developed much of this theory, known as public choice theory. One theory assumes that voting is determined by the voter with the median income, which is usually less than the mean income. As a result, income redistribution programs favor people with lower incomes (Lybeck and Henrekson, 1988) and the scale of such programs increases as the income distribution becomes less equal. Kau and Rubin (2002) suggest that governments maximize revenue. As technology has decreased the cost of collecting taxes, government revenue and, therefore, expenditure have increased.

III. The Government Finance Statistics System

30. The *GFSM 2001* promulgated by the Statistics Department of the International Monetary Fund, is the internationally recognized statistical framework for fiscal reporting.[6] It describes the economic and accounting principles to be used to compile fiscal statistics, and provides guidelines for their presentation. This section describes the major features of the government finance statistics (GFS) system.

A. General Government and the Public Sector

31. Like the *SNA 1993,* the *GFSM 2001* defines the general government and the public sector in terms of institutional units, that is the economic entities that are capable, in their own right, of owning assets, incurring liabilities, and engaging in economic activities and in transactions with other entities[7]. In the literature on the size of the "public sector," the two groupings are often used interchangeably, even though the general government sector is a subset of the public sector.

32. The general government of a country consists of the public authorities and their agencies, which are entities established through political processes that exercise legislative, judicial, and executive authority within a territorial area. As such, the general government sector consists of all government units, which are institutional units that carry out the principal functions of government as their primary activity.[8] Units of the general government sector are commonly classified (1) by level of government—central, state, and/or local as may exist in a specific country, or (2) as either social security funds or other government units. Data limitations frequently restrict analysts to statistics on only the central government or budgetary central government.

33. The public sector consists of general government sector plus public corporations, that is corporations controlled by the government. Corporations are defined as legal entities created for the purpose of producing goods or services for the market (*1993 SNA*, paragraph 4.23). They can be a source of profit or other financial gain to their owners. Corporations controlled by governments are known as public corporations. Through government control, corporations might deliberately sell some of their output at less than the cost of production, thereby fulfilling one or more of government's economic roles of affecting the distribution of income and promoting full employment. The *GFSM 2001* uses the same sectoral definition as the *1993 SNA*, with public corporations classified as either financial or nonfinancial. Public corporation also may

[6] The *GFSM 2001* replaced the Fund's previous manual on fiscal statistics: *A Manual on Government Finance Statistics*, 1986 (*GFSM 1986*).

[7] See chapter IV of the *1993 SNA* for additional information about institutional units

[8] The general government sector includes all nonmarket, nonprofit institutions that are controlled and mainly financed by government units. Because these institutions are effectively a part of government, they should be included in any measure of the size of government. For ease of expression, however, they will not be separately discussed in this paper.

be classified by level of government in the same way as government units. The *GFSM 2001* encourages the compilation of statistics for subsectors of the general government and the public sector.

34. The *GFSM 2001* allows for a wide variety of institutional structures for governments. Responsibilities may be highly centralized or divided between the central government and state and local governments. The trend to decentralize government activities adds complexities to empirical information on the size of the subsectors of general government, as these activities shift over time. However, this should not present problems for the analysis of the size of the consolidated general government. A country's social security system may be highly developed with large financial flows relative to the rest of government, or it may be rudimentary and inseparable from other government operations. A government may establish and control many large public corporations that fulfill the role of government, as well as conducting operations on a normal commercial basis. The *GFSM 2001* allows for the compilation of statistics for the entire public sector and any relevant subsectors, including the general government sector or the central government sector.

B. Harmonization with Other Macroeconomic Statistics

35. The *GFSM 2001* is cast in an analytical framework that fiscal experts can recognize. At the same time it is harmonized with other macroeconomic statistical systems, most notably the *1993 SNA*, providing a common language to develop further the debate on the size of government. The definitions and classifications of sectors and units, most transactions, and most stocks are identical to the corresponding items in the *1993 SNA*. As such, data from the *GFSM 2001* system can be combined with data from the *1993 SNA* to relate GFS to the total economy, which is the most common method of assessing the size of government. Similarly, internationally recognized standards permit GFS to be used in cross-country comparisons.[9]

36. While harmonized, there are differences between the *GFSM 2001* and the *1993 SNA*. The classification of taxes in *GFSM 2001* follow a more typical set of fiscal categories, such as taxes on income and taxes on goods and services, rather than the classification of taxes in the *1993 SNA*. The *GFSM 2001* avoids a number of imputations that are necessary for the *1993 SNA*. Most important, the output of nonmarket goods and services is imputed in the *1993 SNA* as revenue in order to determine total production in the economy, but not in the *GFSM 2001*. There are significant differences in the treatment of employer pension schemes.[10] The *GFSM 2001* recognizes a liability for the obligations of unfunded pension schemes, but the *1993 SNA* does not. Contributions to and benefits paid by all employer pension schemes are treated only as financial transactions in the *GFSM 2001* but are given a dual recording in the *1993 SNA* by also recording them as revenue and expense. Finally, consolidation is utilized more fully in the *GFSM 2001* than in the *1993 SNA*. All transactions and asset/liability positions between units of the general government sector (or the public sector as applicable) are eliminated in the *GFSM 2001*. The intention is to show the general government or public sector as if it were a single unit for analytical purposes.

C. An Integrated Analytical Fiscal Framework

37. The *GFSM 2001* follows the *1993 SNA* structure by recording two types of economic flows (transactions and other economic flows) and integrating these flows with balance sheets. The accounts used (called *Statements* in *GFSM 2001*) are designed as follows and reflect the needs of fiscal analysts. The *Statement of Government Operations* includes all transactions. They are classified as revenue, expense, acquisitions (and disposals) of nonfinancial assets, acquisitions (and disposals) of financial assets, or incurrences (and reductions) of liabilities. The difference between revenue and expense is the net operating balance, which reflects the change in net worth due to transactions. The net operating balance less the net acquisition of nonfinancial assets equals net lending/borrowing, which can also be computed as the difference between

[9] It should be noted that the *1993 SNA* is also harmonized with the *European System of Accounts 1995* and that the *ESA95 Manual on Government Deficit and Debt* has similarities to *GFSM 2001* in that it applies the definitions, conventions, and classifications of *European System of Accounts 1995* to specialized problems of the general government and public sectors.

[10] The Statistics Department of the IMF is the moderator of an electronic discussion group on the treatment of pensions in macroeconomic statistics. See http://www.imf.org/external/np/sta/ueps/index.htm.

the net acquisition of financial assets and the net incurrence of liabilities. The *Statement of Other Economic Flows* includes all economic flows other than transactions, which are divided between the effects of price changes (holding gains and losses) and other changes in the volume of assets.

38. Taken together these economic flows explain all changes in the *Balance Sheet* from the beginning to the end of the accounting period. The balance sheet includes all of the stock measures of the GFS system, including total nonfinancial assets, total financial assets, total assets, total liabilities, net worth, and financial net worth. Because of the importance of liquidity analysis of government operations, a *Statement of Sources and Uses of Cash* is also included in the *GFSM 2001*. Its structure broadly parallels the structure of the *Statement of Government Operations.*

39. Figure 4.1 from *GFSM 2001* is reproduced here to show an overview of the structure of the GFS system. Tables 4.1 to 4.4 of the *GFSM 2001*, shown in the appendix of this paper, indicate the structure of each statement.

40. Many of the studies cited in part II use total expenditure of the general government sector as the primary measure of the size of government. This concept, which was a primary aggregate in *A Manual on Government Finance Statistics*, 1986 *(GFSM 1986)*, includes both current expense transactions and acquisitions of nonfinancial assets. With the separation of current and capital transactions in the *GFSM 2001*, total expenditure is no longer a featured aggregate in the GFS system.

D. The Accrual and Cash Bases of Recording Fiscal Statistics

41. In a sense, the *GFSM 1986* codified the existing national practices for compiling fiscal statistics, including the use of a cash basis of recording transactions. The *GFSM 2001* shifts the focus of analysis to real resource flows by using an accrual basis. Accrual statistics measure events when economic resources are exchanged, transferred, created, transformed, or extinguished, rather than when cash payments are made.

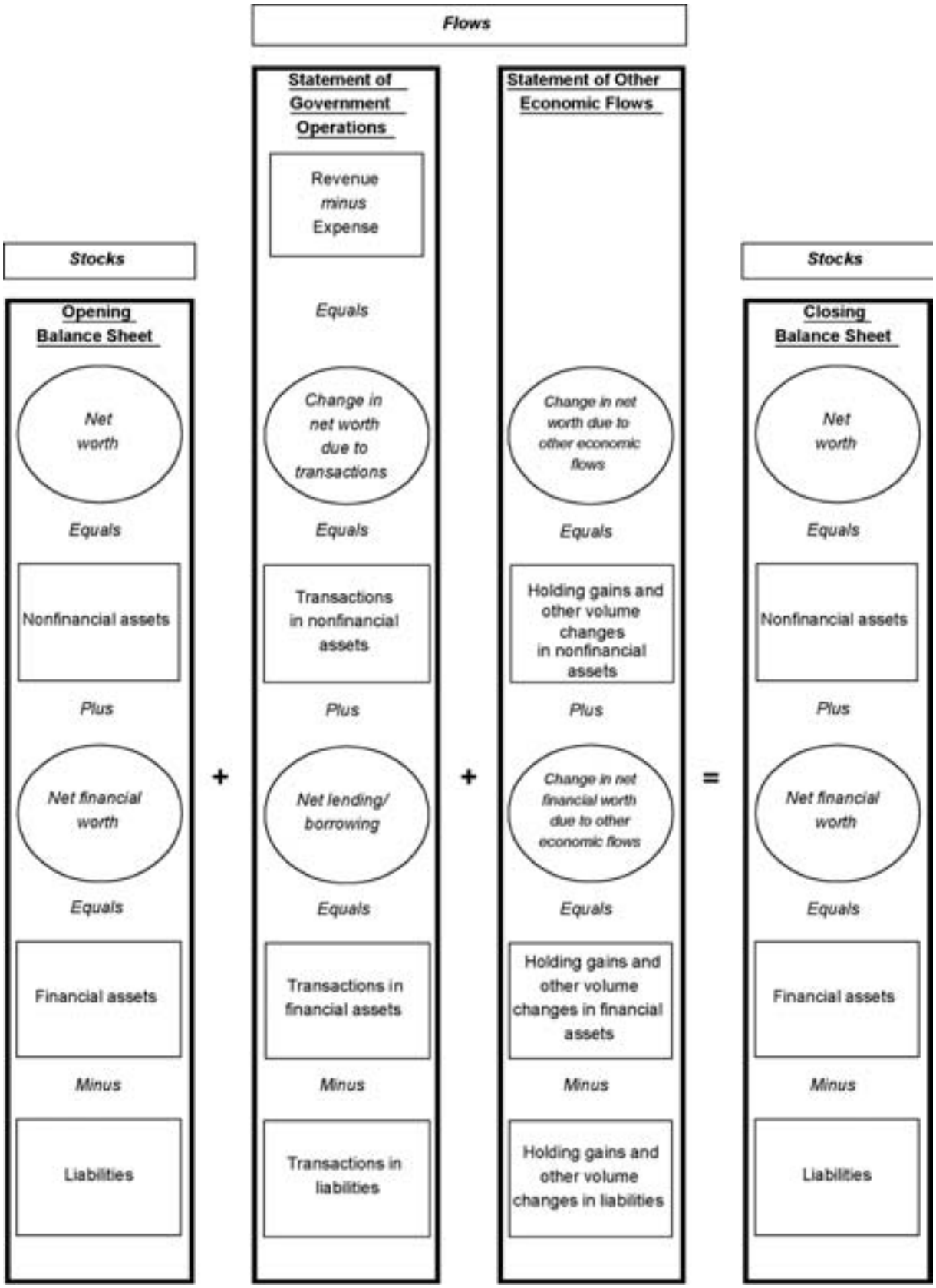
42. Use of an accrual basis requires separate treatments of current and capital transactions. Acquisitions and disposals of nonfinancial assets are now treated as transactions in assets. Previously they were considered revenue and expenditure transactions. One consequence is that a noncash transaction, consumption of fixed capital, must be entered as both an expense transaction and as a decline in the value of fixed assets.

E. Sources and Methods

43. Most of the information for the compilation of fiscal statistics comes from administrative sources. Working in tandem, good practices in public expenditure management and the compilation of fiscal statistics using the *GFSM 2001* would mutually support a sound chart of accounts, general ledger, a single treasury account, and a well-developed financial management information system. The *GFSM 2001* encourages the development of information on the budgetary central government, extra-budgetary agencies and funds, social security, state and local governments, and public corporations on both an accrual and cash basis. It is also envisaged that the GFS system will serve as an intermediate step between the information in the government accounting systems and the compilation of statistics for the *1993 SNA* and other macroeconomic statistics. Nevertheless, practical difficulties in collecting and consolidating data on the various levels of government will remain for *GFSM 2001* compilers. In particular, there are challenges to: 1) develop sound underlying accounting systems, 2) get accurate and timely statistics, 3) collect data from disparate sources, especially public corporations, and 4) acquire details for consolidation.

44. In some cases, compilers of the national accounts may require unconsolidated statistics. They may also need some supplementary information, for example, on own-account capital formation, to compile the national accounts. As noted above, however, the methods used to compile the national accounts and fiscal statistics using the *GFSM 2001* have been harmonized. Consistent with the international statistical methodologies for macroeconomic statistics, the statistical techniques used to compile and consolidate the fiscal statistics should be similar across countries.

Figure 4.1: Structure of the GFS Analytic Framework



IV. Using Government Finance Statistics to Measure the Size of Government

45. Size is a measurement at a given time and, therefore, is a stock concept. Most research into the size of government, however, is performed using flow statistics. To some degree, this approach is sensible because the statistics are more readily available and because size can be assessed in terms of the amount of one flow relative to the amount of another flow, such as government expenditure relative to GDP. As the balance sheet data included in *GFSM 2001* and *1993 SNA* become available, relevant stock data will exist for estimating the size of government. However, users need to recognize that the compilation of fiscal statistics using the *GFSM 2001* system may take several years to develop fully. This section discusses some stock and flow measures of size that might be relevant, as these data become available.

A. Stock Measures

46. Just as the size of physical objects can be described in several ways (such as volume, mass, cross-section, height, width, and length) so can the size of an institutional unit be described by various qualities. One measure of the size of an institutional unit is its productive capacity, which can be measured by its ability to generate value added. Normally capacity will be related to the quantity of nonfinancial assets and the number of employees. The balance sheet in the GFS system will provide a direct measure of the value of nonfinancial assets owned by government, which can be related to the value of all nonfinancial assets in the economy. The percentage of nonfinancial assets owned by government is an indication of the capacity controlled by government and the importance of nonmarket activity.

47. Some types of assets may be of particular interest. The amount of land and subsoil assets owned may be important because governments often own large amounts of these assets and their use in production is not always apparent. Infrastructure assets are important for the production of public goods. The GFS system does not have a specific classification for infrastructure assets, but suggests that a separate estimate may be analytically useful.

48. Net worth is a measure of wealth, and it can be compared with the total wealth of the economy as a measure of the degree of government control of resources. More generally, the integration of balance sheets with flows offers new opportunities for the study of government. It might be interesting to explore whether increases in total government assets lead to increases in net worth over time or whether contemporaneous increases in liabilities neutralize any impact on net worth. There are also questions concerning the quality of the composition of its assets and liabilities, especially regarding relative rates of return and risk holding. Government services can be provided with differing mixes of risk and reward, both between the public and private sectors and between domestic and foreign units.

B. Flow Measures

49. Traditional approaches to the size of government debate rely heavily on the GFS framework. Most investigations of the size of government cited in part II use total government expenditure as the measure of size. This aggregate was featured in the *GFSM 1986* framework but is not a part of the *GFSM 2001* framework. Its accrual equivalent can be constructed using the *Statement of Government Operations* as the sum of production expenses (compensation of employees, use of goods and services, and consumption of fixed capital), transfer payments (subsidies, grants, and social benefits), interest, and gross acquisitions of nonfinancial assets.

50. Transfer payments are particularly important because the growth of transfer payments is responsible for much of the growth of total government expenditure in many countries. Thus, many theories about the growth of the size of government attempt to explain the growth of transfer payments. Transfer payments do not, however, indicate the size of government in any physical sense and do not enter the computation of GDP. Thus, GDP is a useful aggregate to use as a reference point to assess the importance of transfer payments, it is not valid to infer that a share of GDP has been allocated to or appropriated by government. Transfer payments do indicate interference in the operations of the market, and an increasing volume of transfer payments relative to GDP implies a larger government influence on how resources are allocated.

51. While of considerable analytical interest for fiscal analysis, most balancing items are of limited interest for assessing the size of government. The net operating balance shows the impact of transactions on net worth,

and the accumulation of the operating balance over time reflects the sustainability of fiscal policies. Net lending/borrowing shows the injections (or withdrawals) of financial resources into (or out of) the rest of the economy.[11] Thus, time series of these balances provide some information about changes in the size of government.

52. Revenue from social security contributions and expense for social security benefits are specific categories of revenue and expense. Because of the size of these programs in some countries and approaching large demographic changes, some analysis of changes in the size of government may be carried out best by separating the social security system from the rest of government.

53. Flow indications of the physical size of government are best constructed from the national accounts perspective. Value added is the traditional measure of production. The division of an economy's productive resources between market and nonmarket production can be estimated by the share of value added in the general government sector in total GDP. Value added can be measured in the general government sector as the sum of compensation of employees and consumption of fixed capital. The implicit assumption is that the net operating surplus in the general government sector is zero. Many feel this assumption understates the size of government because the cost of the services of government capital should include the interest cost of the amount invested in the nonfinancial assets. An additional adjustment might be necessary if there are market establishments in the general government sector. Compensation of employees is a major component of value added and an indication of the share of the economy's labor resources controlled by government.

54. A second set of national accounts measures deals with the allocation of resources between market and nonmarket uses. Government final consumption expenditure can be measured as a percent of total final consumption. This percentage can be divided between collective and individual goods and services if collective goods and services is believed to be a good proxy for public goods. Government final consumption expenditure is not an explicit item in the *Statement of Government Operations*, but appendix 3 of the *GFSM 2001* provides details on the adjustments necessary to estimate it.

55. The share of government net fixed capital formation plus net acquisitions of nonproduced assets is an indication a change in the size of government because it indicates a change to the government's productive capacity. The more popular gross fixed capital formation provides information on additions to capacity and the degree to which the government may be crowding out the private sector. Consumption of fixed capital is the difference between gross and net fixed capital formation and an indication of a decrease in productive capacity.

56. Some government services, such as national defense, are consumed nationally and others, such as fire prevention services, are consumed locally or regionally. Theoretically the central government should provide national services and state and local governments should provide services consumed only in their areas of responsibility. The classification of government units by level of government can be used for an assessment of the appropriate size of each level of government.

V. Conclusions and New Areas of Research

57. The *GFSM 2001* brings a powerful framework for the analysis of fiscal policy questions and a new set of fiscal variables to serve as tools. It is a comprehensive, integrated system of the stocks and flows of government finances with classifications appropriate for most types of fiscal analysis. Although designed for fiscal analysis, it is expected to serve as an intermediate input to the compilation of statistics for the general government and public sectors of the national accounts. As such, it is not intended to include familiar national accounting aggregates, but it is intended to have the details necessary for their computation. Together with the harmonization of valuation and classifications concepts, statistics from the *GFSM 2001* can be used jointly with statistics from the national accounts for the total economy.

58. The theories about the size of government are quite varied and require different types of statistics to be tested satisfactorily. As a database is built up based on the new manual (which in some cases may take sever-

[11] The net lending/borrowing balance, while of limited value for the size of government debate, is at the center of the EU Stability and Growth Pact under the Maastricht Treaty as articulated in the Excessive Deficit Procedure (especially when expressed as share of GDP).

al years), researchers should not only have more and better material to work with, but acquire a better understanding of the variety of government activities and how they are reflected in the statistics. In addition, statistics compiled using the *GFSM 2001* provide variables not previously available to analysts, opening opportunities for new avenues of research. For example: does the size of the public sector portfolio or the level of its net worth matter? It might be interesting to explore whether the level of assets or liabilities of the public sector relative to GDP has any impact on growth, employment, fiscal sustainability, or the effectiveness of government. While these questions are not new, the ways of analyzing the questions may shed new insight.

59. It might be useful to look at trends in net worth or net financial worth to see if public sector operations are sustainable. Analysts could look at the time series of net worth to assess the impacts of operating activities on the evolution of net worth. Two alternative hypotheses could be considered. One that the public sector can serve as the engine of growth through the provision of vital infrastructure. Under this hypothesis large or growing public sector net worth should be positively correlated with economic growth. Alternatively, it could be argued that public sector activity can crowd out private activity or signal economic deterioration (even if this activity is countercyclical), and thus large or growing net worth could be correlated with negative economic growth.

60. It may be useful to explore the quality of the portfolio of the public sector. Specifically, are the returns on fixed investments greater than those on financial assets, and how do these returns compare with those that could be obtained in the private sector (domestic and foreign). In this context, what public considerations need to be taken into account to adjust these estimated rates of return for the externalities (positive and negative) associated with public goods? Equally important are risk considerations, such as who holds the risk (public or private sectors), what kind of risk is there (domestic or foreign), and what are the risk/reward ratios and alternatives. Placing these considerations in the debate on the size of the public sector and using the information that will become available through the *GFSM 2001* will enhance the analytical usefulness of the statistics.

61. The increasing recognition of the distortional effects of subsidies and other price support programs has led to a reexamination of the role that government should play in income redistribution. The statistics in the GFS system on subsidies and other transfer payments, cross classified by the classification of function of government should assist in this research.

62. In the end, the size of government should be assessed relative to its ability to meet the needs of the population that it serves, as expressed by public preferences at the ballot box. Some current themes are public pressure for the government to assume a larger responsibility for making medical programs affordable and to deal more effectively with negative externalities related to the environment. More generally, the supply of public goods in response to public demand and the resulting size of government depend on the efficiency with which government produces or otherwise provides the public goods.

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Table 4.1: Statement of Government Operations

TRANSACTIONS AFFECTING NET WORTH:

REVENUE

- Taxes
- Social contributions
- Grants
- Other revenue

EXPENSE

- Compensation of employees
- Use of goods and services
- Consumption of fixed capital
- Interest
- Subsidies
- Grants
- Social benefits
- Other expense

NET/GROSS OPERATING BALANCE[1]

TRANSACTIONS IN NONFINANCIAL ASSETS:

NET ACQUISITION OF NONFINANCIAL ASSETS[2]

- Fixed assets
- Change in inventories
- Valuables
- Nonproduced assets

NET LENDING/BORROWING[3]

TRANSACTIONS IN FINANCIAL ASSETS AND LIABILITIES (FINANCING):

NET ACQUISITION OF FINANCIAL ASSETS

- Domestic
- Foreign

NET INCURRENCE OF LIABILITIES

- Domestic
- Foreign

1. The net operating balance equals revenue minus expense. The gross operating balance equals revenue minus expense other than consumption of fixed capital.
2. Acquisitions minus disposals and consumption of fixed capital.
3. Net lending/borrowing equals the net operating balance minus the net acquisition of nonfinancial assets. It is also equal to the net acquisition of financial assets minus the net incurrence of liabilities.

Table 4.2: Statement of Sources and Uses of Cash

CASH FLOWS FROM OPERATING ACTIVITIES:

CASH RECEIPTS FROM OPERATING ACTIVITIES

Taxes
Social contributions
Grants
Other receipts

CASH PAYMENTS FOR OPERATING ACTIVITIES

Compensation of employees
Purchases of goods and services
Interest
Subsidies
Grants
Social benefits
Other payments

Net cash inflow from operating activities

CASH FLOWS FROM INVESTMENTS IN NONFINANCIAL ASSETS:

PURCHASES OF NONFINANCIAL ASSETS

Fixed assets
Strategic stocks
Valuables
Nonproduced assets

SALES OF NONFINANCIAL ASSETS

Fixed assets
Strategic stocks
Valuables
Nonproduced assets

Cash outflow from investments in nonfinancial assets

CASH SURPLUS/DEFICIT[1]

CASH FLOWS FROM FINANCING ACTIVITIES:

NET ACQUISITION OF FINANCIAL ASSETS OTHER THAN CASH

Domestic
Foreign

NET ACQUISITION OF LIABILITIES

Domestic
Foreign

Net cash inflow from financing activities

NET CHANGE IN THE STOCK OF CASH[2]

1. Net cash inflow from operating activities less the cash outflow from investments in nonfinancial assets.
2. Cash surplus/deficit plus the net cash inflow from financing activities.

Table 4.3: Statement of Other Economic Flows

CHANGE IN NET WORTH RESULTING FROM TO OTHER ECONOMIC FLOWS
NONFINANCIAL ASSETS
Holding gains
Other volume changes
FINANCIAL ASSETS
Holding gains
Other volume changes
LIABILITIES
Holding gains
Other volume changes

Table 4.4: Balance Sheet

	Opening balance sheet	Closing balance sheet
NET WORTH		
NONFINANCIAL ASSETS		
Fixed assets		
Inventories		
Valuables		
Nonproduced assets		
FINANCIAL ASSETS		
Domestic		
Currency and deposits		
Securities other than shares		
Loans		
Shares and other equity		
Insurance technical reserves		
Financial derivatives		
Other accounts receivable		
Foreign		
Currency and deposits		
Securities other than shares		
Loans		
Shares and other equity		
Insurance technical reserves		
Financial derivatives		
Other accounts receivable		
Monetary gold and SDRs		
LIABILITIES		
Domestic		
Currency and deposits		
Securities other than shares		
Loans		
Shares and other equity (public corporations only)		
Insurance technical reserves		
Financial derivatives		
Other accounts payable		
Foreign		
Currency and deposits		
Securities other than shares		
Loans		
Shares and other equity (public corporations only)		
Insurance technical reserves		
Financial derivatives		
Other accounts payable		

THE SIZE OF THE GOVERNMENT SECTOR IN THE EURO AREA, THE US AND JAPAN: HOW TO MEASURE

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Introduction

An important economic issue facing policymakers during the last three decades has been the effect of increasing sizes of governments, despite marked differences in their institutional and demographic structures. What have been the consequences of this growth for the welfare of the citizens in these countries and for the economic performance of their economies? These questions are, of course, most relevant for economists. The very "non-market" nature of many of the goods and services governments supply, however, makes it difficult to measure their effects on welfare and economic performance. Economists have accordingly not tried to answer these questions but rather focussed on the economic causes of government popularity and on the economic consequences of government growth or size.

Beyond carrying out these analyses the measurement of government growth or size is often seen as a rather straightforward exercise. Government revenue, expenditure or debt - as a share of gross domestic product - are usually taken as the appropriate measures without further reasoning about their content and quality. Is it statistically valid to say that governments now generally 'absorb nearly half of the euro area's gross domestic product', compared to somewhat lower ratios for the US and Japan (almost thirty and forty per cent of the GDP, respectively)? While the statistical comparison might be appropriate, the interpretation is somewhat misleading, as government expenditure is not an exclusive part of GDP.

The paper deals with various issues of measuring the size of governments, specifically related to its comparability across economies like the euro area, the US and Japan. Section two describes the accounting framework, which is predominantly used to measure the size, while the delimitation of the government sector is described in section three. It refers to the general government sector, to the public sector, which includes general government and public corporations, and to broader definitions. Section four introduces various government measures derived from the national accounting framework. Finally, section five reviews the work already done on the derivation of government size measures based on generally accepted accounting practices and on indicators, while section 6 covers some conclusions.

2. The accounting framework

For the time being, various international accounting standards exist regarding government accounts. These are in addition to the SNA93 and its European twin, the ESA95, the Eurostat ESA95 manual on government deficit and debt, the draft Guide on Government Finance Statistics developed within the ECB, the IMF Government Finance Statistics Manual 2001 and to some extend the standards adopted by the Public Sector Committee of the IFAC (International Federation of Accountants).

[1] Without implicating, the author would like to thank Werner Bier, Julia Catz, Christophe Duclos, Jeff Golland and Emmanuel Larue for their assistance and comments. The views expressed in this paper are not necessarily those of the ECB.

2.1 The System of National Accounts (SNA93)

The measurement of the size of government as part of an economy requires consistent quantitative information about the governments' activities and positions. The *System of National Accounts (SNA93)* provides such information in a comprehensive accounting framework. It is built around a sequence of interconnected flow accounts linked to different types of economic activity, which are carried out by institutional units like corporations, households or governments within a given period of time, together with balance sheets that record the values of the stocks of assets and liabilities held by institutional units or sectors at the beginning and the end of the period.

Government units are described in the SNA93 as unique kinds of legal entities established by political processes, which have legislative, judicial or executive authority over other institutional units within a given area. Viewed as institutional units, the principal functions of government are to assume responsibility for the provision of goods and services to the community or to individual households and to finance their provision out of taxation or other incomes, to redistribute income and wealth by means of transfers, and to engage in non-market production. They are grouped together into the general government sector divided into the four sub-sectors central, state and local government and social security funds, where applicable.

The SNA93 has not yet been fully adopted by the US. Consequently, government data derived from the accounting framework currently used by the US authorities are not completely comparable with the data compiled for the euro area and for Japan. For both these economies, most of the implementation work was done some years ago. For the European Union this adoption refers to the European System of National and Regional Accounts (ESA95). For Japan, the implementation work was documented in publications of the Economic and Social Research Institute and the Bank of Japan.[2]

An SNA review is planned, which is being managed by the Intersecretariat Working Group for National Accounts (ISWGNA) consisting of representatives from Eurostat, the IMF, the OECD, the United Nations, and the World Bank. The ISWGNA oversees the implementation of the SNA93, clarifies conceptual issues regarding the national accounts, and has recently begun the process of updating SNA93, which is expected to lead to a revised manual by 2008.

2.2 The European System of National and Regional Accounts (ESA95)

Referring to the methodology used in Europe, the measurement of government was originally influenced by the Protocol on the *Excessive Deficit Procedure annexed to the Maastricht Treaty in 1992*.[3] It states that the data for the budgetary surveillance should be compiled according to the accounting rules of the European System of Integrated Economic Accounts (ESA) – at that time ESA79.[4]

ESA79 was replaced with the *ESA95* in 2000. As in the SNA93 the balance sheets and flow accounts were included into the ESA95, which cover transactions, other changes in volume of assets as well as holding gains or losses. Annex B of ESA95 specifies the tables, which the Member States shall transmit to the Commission (Eurostat) within the time limits given for each table. This Transmission Programme also entails various tables with data for the government sector, like table 2 (main aggregates general government), table 9 (detailed tax receipts by sector) and table 11 (general government expenditure by function). Other detailed government data for EU Member States are included in the sectoral tables 6, 7 and 8 (financial transaction accounts, balance sheets for financial assets and liabilities and non-financial accounts by sector).

Much work has been done in Europe to improve the quality of the government accounts as reflected in the *Eurostat's ESA95 manual on government deficit and debt*. In the meantime, this manual is seen as an indispensable complement to ESA95 (and SNA93) to aid the application of the ESA95 methodology for calculating the government deficit and debt in the EU Member States. It is the result of a collective work of reflection, con-

[2] See specifically the publications of the Economic and Social Research Institute, Cabinet Office (2002), "SNA93 in Japan - Sources and methods" and of the Bank of Japan (2002), Guide to Japan's Flow of Funds.

[3] Council Regulation (EC) No 3605/93 of 22 November 1993 and its amendment, Council Regulation (EC) No 475/00 of 28 February 2000, on the application of the Protocol on the excessive deficit procedure annexed to the Treaty establishing the European Community.

[4] The excessive deficit procedure requires prompt submission of fiscal data twice annually. See Council Regulation (EC) No 1467/97 of 7 July 1997 and the Ecofin Council conclusions on the "Code of best practice on the compilation and reporting of data in the context of the excessive deficit procedure" from 18 February 2003.

ceptual and textual elaboration made by a group of experts, co-ordinated by Eurostat and representing EU countries, the Commission (Eurostat and the Directorate General for Economic and Financial Affairs) and the European Central Bank (ECB).

The main sections refer to items like the delimitation of the general government sector, relations between the government and public enterprises, the implementation of the accrual principle, leases, licences and concessions, and government debt. The definition of government debt in the excessive deficit procedure (EDP) is coherent with the provisions of ESA95 concerning the delimitation of the government sector and of the definition of financial instruments. However, it excludes some financial instruments in the ESA95 such as other accounts payable and financial derivatives, and its valuation (nominal) differs from ESA95 valuation rules (market price).

The ECB has prepared a guide on annual government finance statistics. This draft describes the methodology for compiling the tables that present the euro area general government fiscal position in the ECB Monthly Bulletin (section 7 of euro area statistics). The tables are predominantly based on ESA95. The euro area aggregates are compiled by the ECB from harmonised and regularly updated data provided by the National Central Banks.

Table 7.1 shows the general government revenue and expenditure on the basis of definitions laid down in Commission Regulation (EC) No. 1500/2000 of 10 July 2000 amending the ESA95, but with one difference: Government revenue and expenditure include the resources and uses of both the general government sector and the sub-sector for institutions of the European Union, as recorded in the national accounts of the EU countries.

Table 7.2 shows details of general government gross consolidated debt at nominal value in accordance with the Treaty provisions on the EDP.

Both tables also include summary data for individual euro area countries owing to the importance of such data in the framework of the Stability and Growth Pact.

Table 7.3 analyses changes in general government debt. The difference between the change in government debt and government deficit – the deficit-debt adjustment – is mainly explained by government transactions in financial assets and by foreign exchange valuation effects.

2.3 The IMF Government Finance Statistics Manual 2001

The *IMF Government Finance Manual 2001 (GFSM)* was published in December 2001. It replaces the 'old' GFSM of 1986. The new GFSM adopts SNA93. This introduces major changes such as the inclusion of stocks of financial assets and liabilities, and the corresponding flows and the concept of accrual accounting. It is recognised that the implementation of the fully integrated accrual accounting system presented in the GFSM will take a long time for many countries. Countries will need to revise their fiscal data classification systems to reflect fully the accrual basis of recording while still capturing data on a cash basis. In this context, three approaches are described, either relying on already available accrual accounting data, or using national accounts' data that are already available on an accrual basis, or reclassifying cash data to the new framework. In showing a full reconciliation of transactions, other flows, and balance sheets, at market value, the GFSM is almost consistent with ESA95. This also refers to the definition of sectors, the valuation and time of recording of most transactions, and to the definition of other flows and categories of financial instruments.

Otherwise, some differences remain. First, the GFSM treats unfunded pension schemes operated by employers differently from SNA93 or ESA95 in that it does not record social contributions and social benefits, but does record financial transactions for them. This has the effect of reducing the GFSM revenue and expenditure compared with ESA95. Also it means that the GFSM records a balance sheet liability for government employee unfunded pension schemes, which is not included in ESA95. Second, the GFSM collects information on the subsectors of general government but combines the ESA95 social security fund sector with the central government and defines sub-sectors of government (budgetary accounts and non-budgetary accounts) that are not defined in ESA95.

2.4 Standards adopted by the Public Sector Committee of the International Federation of Accountants

The International Accounting Standards Board (IASB) develops International Accounting Standards (IAS). Such standards will be adopted by quoted companies resident in the European Union countries by 2005. The International Federation of Accountants' Public Sector Committee (IFAC PSC) is developing a series of Inter-

national Public Sector Accounting Standards (IPSASs) based on the IASB work. A Steering Group has been established to oversee work on the convergence of accounting and statistical standards. The detailed work will be undertaken by a task force to be established by OECD. The task force will also make proposals to the ISWGNA to revise SNA93 in ways that are consistent with existing and emerging accounting standards.

3. Delimitation of the government sector

The delimitation of the government sector needs to be considered when using statistics on the size of government. Various options include the *general government sector* as in national accounts, the *public sector*, which includes general government and public corporations, and broader definitions.

3.1 The general government sector

Essentially three criteria have to be checked to determine whether a unit belongs in the general government sector as defined for national accounts in SNA93 and ESA95.

First, is such a unit an institutional unit or not? If a public producer is not recognised as an independent legal entity, which is an institutional unit having autonomy of decision and a complete set of accounts, it has to be included into the general government sector.[5]

Second, is an institutional unit a public or a private institutional unit? Control is defined as the ability to determine general policy, and is an essential criterion for sector classification. Private producers are found in all sectors, except the general government sector. In contrast, public producers are found either in the corporation sector as market producers or in the general government sector as non-market producers. Furthermore, public non-profit institutions, which are controlled and mainly financed by general government, are considered as government units.

Third, is the public institutional unit a market or a non-market producer? This depends on the 50%-criterion which examines whether more than 50% of the production costs are covered by sales. This criterion should apply over a range of years. The general government sector also covers all public non-market institutional units even if they have market secondary local kind-of-activity units. Furthermore, a public institutional unit redistributing national income and wealth has to be classified within the government sector, while a public institutional unit dealing with financial intermediation belongs to the financial corporations sector.[6]

3.2 The public sector

Following the delimitation of the general government sector the public sector covers, in addition to the general government sector, also all *public producers organised as public financial and non-financial corporations*. Essentially, the latter are government owned or government controlled businesses.

3.3 The public sector including private sector non-profit institutions serving households and corporations

A broader coverage is provided by the *public sector and any private sector non-profit institutions serving households and corporations* that are mainly financed by government and produce public service outputs. Such organisations are classified to the private sector in national accounts because they do not satisfy the criterion for being controlled by government but some of these organisations exist mainly to produce public services financed by payments from government and user charges. For example, in some countries universities are classified to the private sector but receive a high proportion of their income from government and are expected to conform to various standards and procedures stipulated by government. The organisations often feel like they are part of the public sector even though statistically they are not.

[5] Eurostat, ESA95 manual on government deficit and debt (2001), Part I: Delimitation of the general government sector.

[6] Two criteria are used for the delimitation of the general government sector implementing the SNA93 in Japan. First, the criterion for separating the public sector from the private sector is "whether an institute meets the condition of ownership and control". In the concrete, the criteria include the degree of equity contribution from the central government or local governments, rights to nominate or approve officials, rights to decide on management policy, whether an institution acts as an agent of the central government or a local governments, etc. Second, the criterion for separating general government from public corporations is "whether goods or services provided by an institution have marketability". The criteria include the conditions of its financial assets, whether the type of industry, prices, etc., have marketability, and the other factors. See: Economic and Social Research Institute - Japanese Government (2002).

While the coverage of the general government sector has been thoroughly examined during recent years, there are no comprehensive national accounts data for this broad definition of the public sector that includes non-profit institutions serving households and corporations that are mainly financed by government and produce public service outputs. In some countries there are national accounts' data for the narrower definition of the public sector that includes general government and public corporations, and this definition is also of interest for IMF's GFSM.

3.4 Restricted comparability of the government sector due to different institutional arrangements

The delimitation of the government sector described above is influenced by institutional arrangements in the different economies and can distort comparisons of the size of government. This distortion applies particularly to health and education services when general government sectors are compared and to the provision of public utilities and transport when the public sectors are compared. To avoid this it can be helpful to compare government expenditure broken down by function.[7]

Such institutional arrangements have been thoroughly compared between the different EU countries. In the process of implementing ESA95, questions were discussed in which sector to classify, for instance, public hospitals and homes for elderly people according to ESA95. Significant differences among the EU countries were revealed concerning the way payments are made by government to public hospitals. In this context, only payments made according to a system of pricing applied to both public and private hospitals were considered as sales also determining the classification of such units.

Another example referred to schools. Following the criteria listed above it has to be considered whether, in a specific case, the general government controls a school or not. This could be checked by the criteria like whether the government's approval is needed for creating new classes, for making investments in fixed capital or for borrowing or whether the government can prevent the school from ending its relationship with government. Otherwise, the government does not control the institutional unit if it just finances the school or it supervises the quality of education the school has to provide.

Much work has to be done to compare the methodology of the government data compiled for the euro area with the methodology applied to the US and Japanese data. Especially, it might be worthwhile to consider more intensively the existing methodological differences in international fora, as it is the case for other statistics. The forthcoming implementation of the IMF's GFSM as well as the envisaged revision of the SNA93 might be seen as encouraging activities to achieve more harmonised data for most the countries.

4. Measuring the government sector within the accounting framework

Within the accounting framework as described above there are various ways to measure the size of government. Such measures are usually derived as ratios with nominators and denominators expressed in monetary terms. The use of such ratios expressed as percentages of nominal GDP, or of other nominal values, circumvents questions like: which exchange rates or purchasing power parities should be used to receive 'internationally comparable' aggregates for the various economies? Otherwise, the ratios with nominators and denominators expressed in monetary terms need to be defined carefully, especially the selection of the appropriate denominator. In this paper, the nominal GDP is mainly chosen because of its international comparability. Other nominal measures may also be used like government revenue, expenditure or debt if they are similarly compiled and closely linked to the numerator.

Measuring and comparing the size of government in the euro area the data are mainly taken from the tables 7.1 to 7.3 of the euro area statistics section in the ECB's Monthly Bulletin. For the US, the data used for the comparison are included in the National Income and Product Accounts (NIPA) tables published by the U.S. Bureau of Economic Analysis (BEA) and in the flow of funds tables disseminated by the Federal Reserve Board. The Japanese national accounts and flow of funds data have been taken from publications of the Economic and Social Research Institute (Cabinet Office) and of the Bank of Japan.

[7] The ESA95 Transmission Programme includes table 11 with a breakdown of general government expenditure by economic category (for example: transfers, intermediate consumption, wages) and by the UN system for the classification of the functions of government (COFOG). Function here means activities such as health, education or defence.

4.1 Measuring the government sector in monetary terms

There are various ways to measure the size of government in *monetary terms*: such as the burden on residents through taxation and other payments required by government, its output, and the activity it finances.

4.1.1 Burden on residents through taxation and other payments required by government

The burden on residents through taxation and other payments required by general government can be defined narrowly as taxes and compulsory social contributions; or more broadly by including fines and licences (payments to government for services it is necessary to buy to perform certain activities or undertake certain types of business); or even more broadly by including purchases from non-government units that are required by government regulation. This broad definition would exclude the market activity of government where there is no legal necessity to purchase the goods and services. Because of the availability of data only the narrow definition of the burden on residents through taxes amd compulsory social contributions, the fiscal burden, is used.

Taxes are part of government revenue, which is broken down into various categories like direct and indirect taxes, social contributions, other current revenue, sales and capital revenue (see Table 1).

Table 1:
Components of government revenue*)

Category	**ESA 95 transaction category (R = resources, U = uses)**
Revenue	
Current revenue	
Direct taxes	*D.5* R, current taxes on income, wealth, etc.
Indirect taxes	*D.2* R, taxes on production and imports *D.2* R of *S.212*, taxes paid to EU
Social contributions	*D.61* R, social contributions
Other current revenue	*D.39* U, other subsidies on production *D.41* R, interest, consolidated *D.42* R, distributed income of corporations *D.43* R, reinvested foreign earnings *D.45* R, rent *D.72* R, non-life insurance claims *D.74* R, current international co-operation, except from EU institutions *D.75* R, miscellaneous current transfers Net receipts from EU, if Member State is a net recipient
Sales	*P.11* R, market output *P.12* R, output for own final use *P.131* R, payments for other non-market output
Capital revenue	*D.9* capital transfers receivable, consolidated, except from EU institutions

*) As defined for the euro area.

Euro area government revenue was 46.6% of GDP in 2002, which was presumably much higher than in the US and Japan. However, no comparable total government revenue figures could be derived for the two countries because of some methodological differences and missing categories within revenue. It is assumed that the US government revenue was almost 30% and the Japanese government revenue 40% of GDP in 2002. Note that quoting government revenue, as a percentage of GDP, does not mean that government acquires for its own use that percentage of the nation's GDP. For example, most government revenue from sales is used to pay wages and intermediate consumption used in the production of goods sold to willing purchasers, and some tax receipts will be from taxes on government social benefits (redistributed income rather than primary income). So, revenue as a percentage of GDP is an indicator of the government's overall intervention in an economy rather than an indicator of the burden on its citizens

Taxes cover direct and indirect taxes as part of current revenue. For the euro area, direct taxes are current taxes on income and wealth as defined in the ESA95 transaction category D.5. Indirect taxes comprise taxes on production and imports recorded as being paid to government in national accounts, and also taxes paid to the EU budgetary institutions. Capital taxes are included in capital revenue.

Table 2
Tax burden in the euro area, the US and Japan

As a percentage of GDP

	Euro area				US				Japan			
	Total	Direct taxes	Indirect taxes	Capital taxes	Total	Direct taxes	Indirect taxes	Capital taxes	Total	Direct taxes	Indirect taxes	Capital taxes
1991	25.0	11.8	13.0	0.2	19.8	12.0	7.5	0.3	21.0	13.2	7.3	0.4
1992	25.5	11.9	13.0	0.6	19.7	11.9	7.5	0.3	20.8	12.4	7.8	0.6
1993	25.6	12.1	13.2	0.3	20.1	12.2	7.6	0.3	19.3	11.3	7.5	0.6
1994	25.2	11.6	13.4	0.2	20.4	12.5	7.6	0.3	18.4	10.2	7.6	0.6
1995	25.2	11.6	13.3	0.3	20.7	12.9	7.5	0.3	17.9	9.7	7.7	0.5
1996	25.7	12.0	13.4	0.3	21.2	13.5	7.4	0.3	18.0	9.7	7.9	0.5
1997	26.1	12.2	13.5	0.4	21.6	14.0	7.3	0.3	17.9	9.7	7.8	0.5
1998	26.8	12.4	14.1	0.3	22.0	14.4	7.2	0.4	17.2	8.4	8.3	0.4
1999	27.4	12.8	14.3	0.3	22.2	14.7	7.2	0.4	17.0	8.1	8.4	0.4
2000	27.5	13.0	14.2	0.3	22.7	15.2	7.1	0.4	17.4	8.6	8.4	0.4
2001	26.8	12.6	13.9	0.3	21.7	14.3	7.1	0.4	17.9	9.1	8.5	0.3
2002	26.2	12.1	13.8	0.3	20.7	12.7	7.7	0.3	.	.	.	.

According to the data as published in the ECB Monthly Bulletin table 7.1 taxes received by the euro area general government were 26.2% of GDP in 2002 as shown in Table 2. This ratio was one percentage point lower in 1995 and also in 1991. In the US the comparable tax rate was only 20.7% of GDP in 2002 and in 1995, but lower in 1991 (19.8% of GDP). The tax rate was lowest in Japan, 17.9% of GDP in 2001, and also in 1995, but higher in 1991 (21.0% of GDP). Data for 2002 are not yet available for Japan.

Compulsory social contributions are also part of current revenue of general government included in the ESA95 category D.61. Social contributions paid to general government were also highest in the euro area, with 16% of GDP in 2002. This ratio went down from 17.3% of GDP in 1995 and 16.7% in 1991 as indicated in Table 3. Only 7.1% of GDP were received as social contributions by the US general government. It is doubtful, however, whether imputed social contributions are included in the US figures, thereby possibly underestimating the level of social contributions. Transfer payments are net in US accounts with an additional effect of underestimating social contributions as well. In Japan, this ratio was 10.7% of GDP in 2002, and therefore in between the two ratios reported for the two other economies. They were only 8.9% of GDP in 1991 and 9.8% of GDP in 1995.

Table 3
Compulsory social contributions in the euro area, the US and Japan

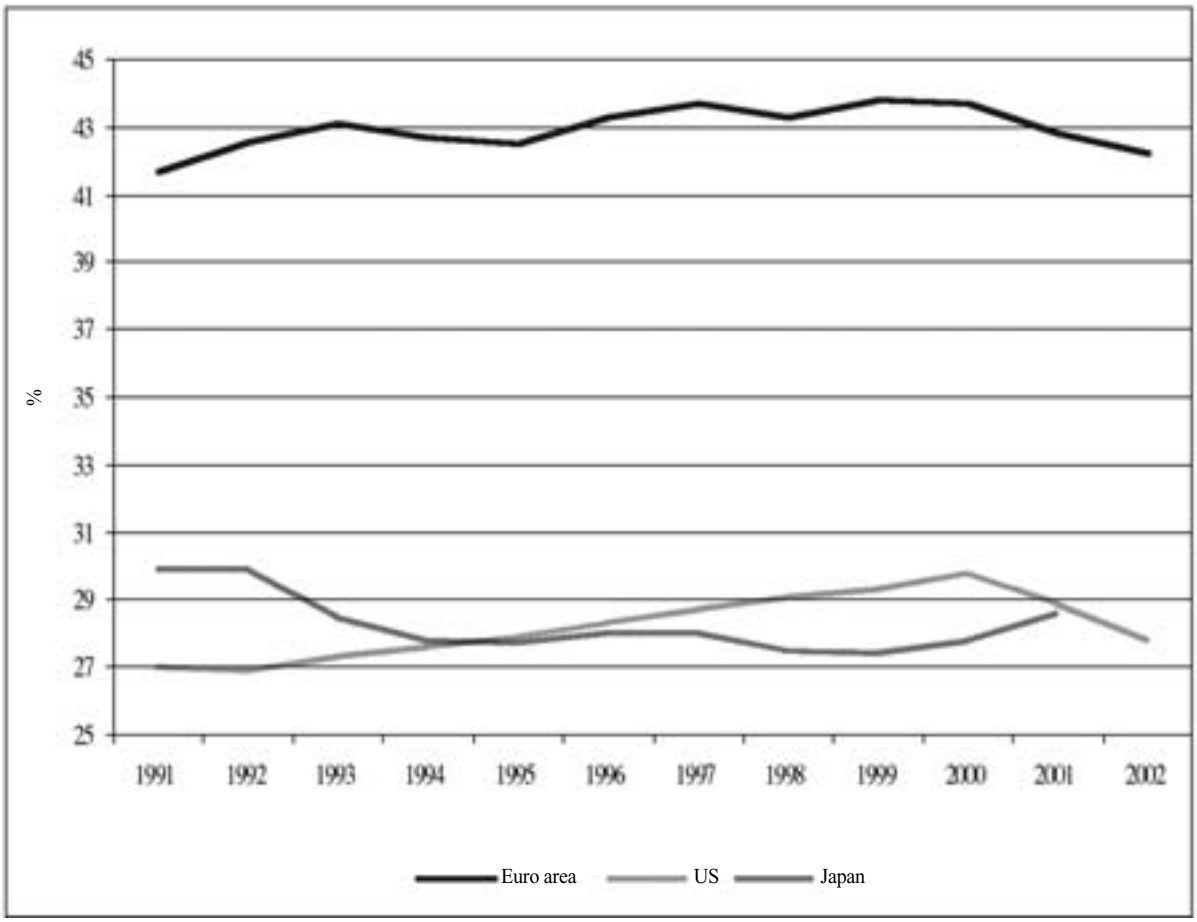
As a percentage of GDP

	Euro area Social contributions	Employers	Employers	US Social contributions	Employers	Employers	Japan Social contributions	Employers	Employers
1991	16.7	8.6	5.3	7.2	3.6	3.6	8.9	4.4	4.0
1992	17.1	8.6	5.4	7.2	3.6	3.6	9.1	4.5	4.1
1993	17.5	8.7	5.6	7.2	3.6	3.6	9.2	4.5	4.2
1994	17.5	8.5	5.7	7.2	3.6	3.6	9.4	4.6	4.4
1995	17.3	8.4	5.6	7.2	3.6	3.6	9.8	4.8	4.6
1996	17.6	8.7	5.6	7.1	3.5	3.6	10.0	4.9	4.7
1997	17.6	8.8	5.6	7.1	3.5	3.6	10.1	4.9	4.8
1998	16.5	8.5	5.0	7.1	3.5	3.6	10.3	5.0	4.9
1999	16.4	8.5	5.0	7.1	3.5	3.6	10.4	5.0	4.9
2000	16.2	8.4	4.9	7.1	3.5	3.6	10.4	5.0	4.9
2001	16.0	8.4	4.8	7.2	3.5	3.7	10.7	5.1	5.1
2002	16.0	8.4	4.7	7.1	.	.	.	.	.

Adding up taxes and social contributions a measure for fiscal burden may be derived. According to this definition fiscal burden was, for the euro area, 42.3% of GDP in 2002 and 42.6% of GDP in 1995 as indicated in Chart 1.

Chart 1
Fiscal burden in the euro area, the US and Japan

As a percentage of GDP



In the US, the ratio increased to 29.4% of GDP in 2000, but decreased afterwards down to 27.8% of GDP in 2002. The fiscal burden in Japan was highest in 1991 (29.8% of GDP) and decreased to 27.2% of GDP in 1999. In 2001, this ratio was 28.7% of GDP, which was of similar size like in the US. While the fiscal burden was significantly higher in the euro area than in the US and Japan, the corresponding ratios remained rather stable over the last twelve years, with values around 43% of GDP for the euro area and between 27% and 30% of GDP for the US and Japan.

4.1.2 Government expenditure and output

Other measures of the size of government refer to its *expenditure* and *output*. *Government expenditure* covers social payments, subsidies, other current transfers, interest, compensation of employees, intermediate consumption and capital expenditure as shown in Table 4. Government surplus or deficit is derived as the balancing item of revenue and expenditure.

Table 4
Components of government expenditure*)

Category	ESA 95 transaction category (R = resources, U = uses)
Expenditure	
Current expenditure	
Social payments	*D.62* U, social benefits other than social transfers in kin (+) *D.75* U, transfers to NPISHs (+) *D.6311* + *D.63121* + *D.63131* U, social transfers in kind via market producers
Subsidies	*D.3* R, subsidies (+) *D.3* R of *S.212*, subsidies paid by EU to resident non-government units
Other current transfers	*D.29* U, other taxes on production (+) *D.45* U, rent (+) *D.5* U, current taxes on income, wealth, etc. (+) *D.71* U, non-life insurance premiums (+) *D.74* U, current international co-operation, except to EU institutions (+) *D.75* U, miscellaneous current transfers, except to EU institutions (+) net payments to EU if Member State is a net payer
Interest	*D.41* U, interest, consolidated
Compensation of employees	*D.1* U, compensation of employees
Intermediate consumption	*P.2* U, intermediate consumption
Capital expenditure	
Government investment	*P.51*, gross fixed capital formation
Net acquisition of other non-financial assets	*P.52,* change in inventories (+) *P.53,* net acquisition of valuables (+) *K.2*, net acquisition of non-financial non-produced assets
Capital transfers	*D.9*, capital transfers payable, consolidated *D.9,* of *S.212*, capital grants to resident non-government units from EU

*) As defined for the euro area.

Government expenditure in the euro area was 48.8% of GDP in 2002, which was significantly lower than in 1995 (52.2%) and in 1991 (51.2%). About ninety percent of government expenditure was current, while government investment (purchases and construction of fixed capital assets) as the largest part of capital expenditure was 2.4% of GDP. These definitions of capital expenditure and investment both exclude government expenditure on financial assets such as the purchase of company shares or government lending like to students or businesses.

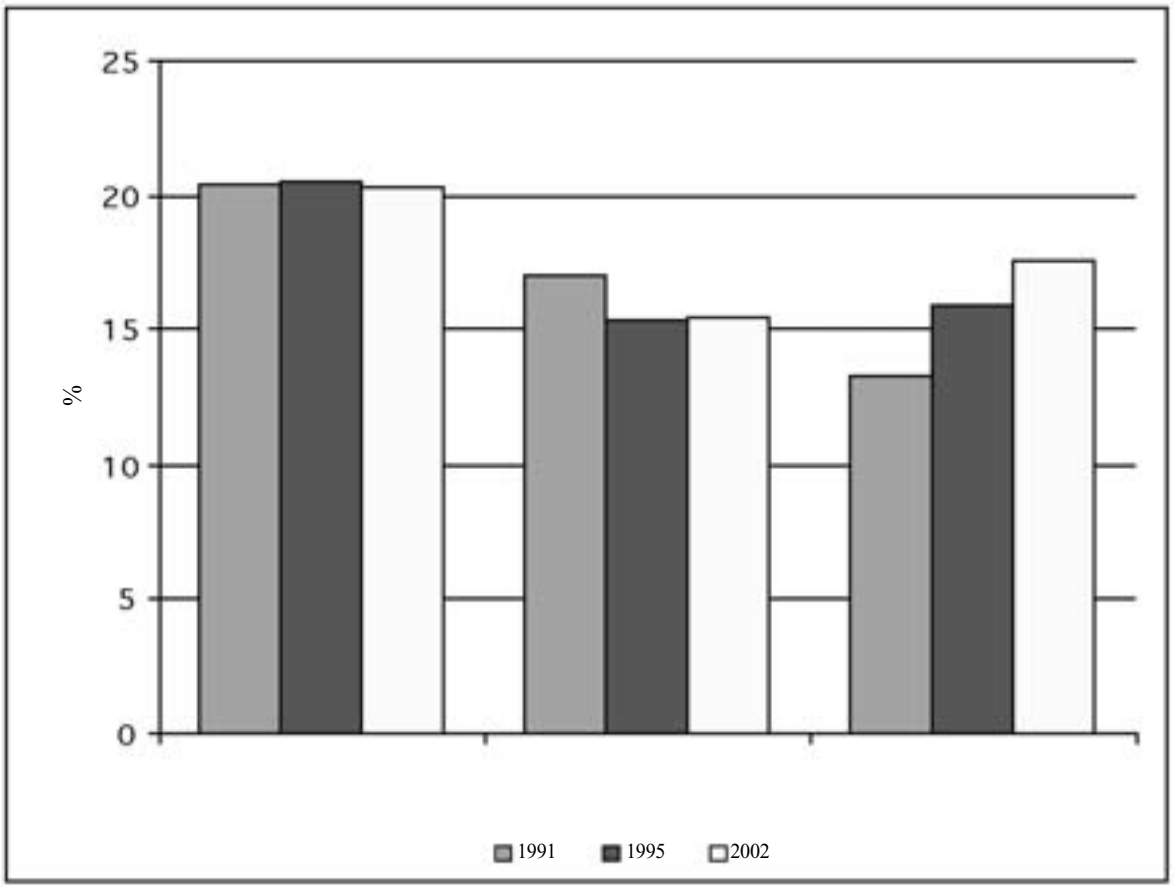
The size of government could also be measured by considering *government output*, but this is not recommended. Government output comprises output that is sold, output that creates capital assets, and non-market output which by definition is the sum of the costs of producing that output. International comparisons of government output can be distorted by the way in which purchases of goods and services, that are bought to provide services to households, are classified as intermediate consumption, and hence part of output, or as social benefits in kind via market producers (a transfer payment not part of government output). A broader definition of public output could also include the output of government-owned corporations such as public utilities, postal services, and transport.

Government final consumption is a better measure than output for comparing government expenditure since it includes social benefits in kind via market producers, and is net of payments for government non-market output. When expressed as a measure of GDP it is a genuine measure of the proportion of domestic production that is bought and consumed by government (as current expenditure). It excludes government interventions to redistribute income.

Comparing government consumption shows that this measure for the euro area was 20.3% of GDP in 2002 without any substantial change since 1991 (see Chart 2).

Chart 2
Government consumption in the euro area, the US and Japan

As a percentage of GDP



For Japan, data only up to 2001.

For the US, government consumption expenditure was 15.5% of GDP in 2002 and of a similar size in 1995 (15.3%). In 1991, this ratio was 17.0% of GDP. It is not clear whether compensation of employees and intermediate consumption as parts of government consumption relate only to non-market activities or not, thereby possibly underestimating this figure in comparison to the euro area. It is also unclear whether imputed social contributions are taken into account to calculate the compensation of employees. Therefore, government consumption might be underestimated for the US in comparison to the euro area. For Japan, government final consumption expenditure as a percentage of GDP increased to 17.5% in 2001, up from 13.3% in 1991 and 15.9% of GDP in 1995.

4.1.3 Financing

The size of government can also be examined by the *activity it finances*. Such activity includes various components of government expenditure like transfer payments such as social security, debt interest, grants to non-government bodies producing public services, and purchases of services supplied directly to households by non-government units. Table 5 provides such a measure, combining interest expenditure and current transfers. As a percentage of GDP, this variable decreased to 29.4% for the euro area in 2002, down from 31.8% in 1995 and 30.3% in 1991. The decrease since the mid-nineties was due to the relative decline of interest payments by euro area general government measured as a percentage of GDP, as a result of low interest rates and of declining government debt ratios for the euro area since 1996. In the US, government interest expenditure and current transfers as a percentage of GDP were only half of the size in the euro area. However, trends in this ratio since 1991 have showed a similar pattern in the US. While it was 16.1% of GDP in 1991, it reached its peak in 1995 (17.0% of GDP) and decreased afterwards to 15.3% of GDP in 2002.

Looking at the corresponding data for Japan interest and current transfers raised to 25.1% of GDP in 2001, up from 19.7% of GDP in 1991and 22.0% of GDP in 1995. This increase of the ratio was mainly due to the rise in social payments as the major part of current transfers, which increased to 20.0% of GDP in 2001, while interest payments decreased, like in the other economies, and subsidies remained rather stable, both measured as a ratio of GDP.

Table 5
Interest and current transfers in the euro area, the US and Japan

As a percentage of GDP

	Euro area					US					US				
	Total	Interest	Current transfers	Social payments	Subsidies	Total	Interest	Current transfers	Social payments	Subsidies	Total	Interest	Current transfers	Social payments	Subsidies
1991	30.3	5.3	25.0	21.1	2.5	16.1	5.3	10.8	10.8	0.5	19.7	3.5	16.2	14.5	0.9
1992	31.3	5.7	25.6	22.0	2.4	17.3	5.0	12.3	11.5	0.5	19.9	3.5	16.4	14.8	0.8
1993	32.5	5.9	26.6	22.9	2.5	17.3	4.8	12.5	11.7	0.6	20.6	3.4	17.2	15.4	0.8
1994	32.0	5.5	26.5	23.0	2.4	16.8	4.6	12.2	11.5	0.5	21.1	3.4	17.7	16.0	0.8
1995	31.8	5.7	26.1	22.9	2.2	17.0	4.8	12.2	11.6	0.4	22.0	3.4	18.6	16.8	0.8
1996	32.3	5.7	26.6	23.3	2.2	16.8	4.7	12.2	11.5	0.4	22.3	3.4	18.8	17.0	0.8
1997	31.4	5.1	26.3	23.2	2.1	16.2	4.5	11.8	11.2	0.4	22.3	3.4	18.9	17.2	0.8
1998	30.7	4.7	26.0	22.7	2.0	15.6	4.2	11.4	10.9	0.4	23.0	3.4	19.6	17.9	0.7
1999	30.0	4.2	25.8	22.6	2.0	15.1	3.9	11.2	10.6	0.5	24.2	3.4	20.8	18.7	0.8
2000	29.5	4.0	25.5	22.3	1.9	14.8	3.7	11.1	10.6	0.4	26.5	3.3	23.3	19.3	0.9
2001	29.4	4.0	25.4	22.3	1.9	15.3	3.4	11.9	11.3	0.5	25.1	3.2	21.9	20.0	0.8
2002	29.4	3.7	25.7	22.9	1.8	15.6	3.0	12.6	12.0	0.4	.	.	.	.	.

The comparison of the size of government in the various economies based on components of revenue, expenditure or consumption has to be supplemented by data on general government deficit and debt. Both variables play a prominent rule in assessing the general government's activity or position in an economy vis-à-vis other sectors or other countries' governments. This specifically applies for the budgetary surveillance in the European Union in the context of the EDP and the Stability and Growth Pact.

General government deficit or surplus is identical to its net borrowing or lending to other sectors of the economy and to the rest of the world. This balancing item is usually taken from the capital account. Government debt and its structure, also in the context of government assets, are seen as indicators of financial stability. In this context, there is a specific interest to know the size and structure of debt broken down by financing instrument, maturity, holder or currency. Such an analysis, however, requires rather detailed and complete balance sheet data, which are currently only available for financial assets and liabilities.

For the debt ratios, it has to be taken into account that the data available for the euro area, the US and Japan are not immediately comparable. For the euro area, debt is defined as Maastricht debt covering specific instruments and following nominal valuation without taking into account interest accrued. For the euro area, Maastricht debt decreased to 69.1% of GDP in 2002, down from 74.2% of GDP in 1995 as shown in Table 6. In 1991, this ratio was only 57.4%. In Japan, the government debt ratio covering the instruments as included in the EDP debt increased substantially during the recent years accompanied by extraordinary high government deficits.[8] The debt ratio was 134.6% of GDP in 2001. Otherwise, the corresponding debt ratio for the US decreased to a rather low value of 44.0% in 2001, rebounding to 46.2% of GDP in 2002, which was also reflected by the deficit of 3.4% for the same year. As for other indicators further work is needed to derive comparable definitions of government debt also following the SNA93 or ESA95 accounting principles.

[8] The general government debt figures for the US and Japan cover the same financial instruments like the EDP debt. The US data are at nominal value adjusted for accruals, while the Japanese data are at market value.

Table 6
Government deficit and debt in the euro area, the US and Japan

As a percentage of GDP

	Euro area		US		Japan	
	Deficit	Debt	Deficit	Debt	Deficit	Debt
1991	-4.8	57.4	-5.0	57.0	1.8	.
1992	-4.9	60.9	-5.9	59.4	0.8	.
1993	-5.7	67.3	-5.0	60.8	-2.4	.
1994	-5.1	70.0	-3.6	59.0	-3.7	.
1995	-5.1	74.2	-3.1	59.4	-4.7	.
1996	-4.3	75.4	-2.2	58.3	-5.0	.
1997	-2.6	74.9	-0.9	55.8	-3.7	95.9
1998	-2.3	73.2	0.3	52.7	-10.7	105.6
1999	-1.3	72.1	0.7	49.6	-7.2	118.2
2000	-1.0	69.6	1.4	44.3	-7.4	126.1
2001	-1.6	69.2	-0.5	44.0	-6.1	134.6
2002	-2.3	69.1	-3.4	46.2	.	.

For the euro area, general government gross consolidated debt at nominal value in accordance with the Treaty provisions on the EDP. Corresponding aggregates for the US and Japan taken from flow-of-funds data of the Fed and the Bank of Japan. Debt figures based on the calendar year are not available for Japan from 1996 backwards.

4.2 Measuring the government sector in non-monetary terms

In *non-monetary terms*, the size of government can be examined through the number of people employed in public services. For the time being only incomplete data are available on the number of people employed. Table 5.4 of the ECB Monthly Bulletin on labour market indicators shows that 29.6% or 33 millions of the total euro area employees worked in the domains of public administration, education, and health and other services in 2002. However, it has to be taken into account that these economic activities are not completely government-related. Taking into such an overestimation, this ratio might nevertheless be higher than in the US, where approximately 17% (or 23 millions) of the total employees were employed in the general government sector in 2001. This ratio was less than ten percent in Japan (or 5_ millions).

Taking into account the difficulties in measuring the number of employees on comparable basis it would be preferable to rely more on the monetary measures. In that context, another proxy for this comparison might be the ratio of government compensation of employees as a percentage of GDP or of government expenditure. As a percentage of GDP this ratio was for the euro area 10.6% in 2002, down from 11.2% in 1995 and in 1991, while it was slightly lower in the US (9.6% of GDP in 2002).

5. Other measures of the government sector

5.1 Generally accepted accounting practices

The fact that governments own public corporations, financial and non-financial, and have the capacity to direct them to conduct quasi-fiscal activities argues to the importance of more general reporting of supplementary information on the public sector accounts. *Generally accepted accounting practices (GAAP)* focus on the ability to control as a criterion for consolidated reporting. Their application to government finance reporting may in future provide added impetus to reporting on the fully consolidated public sector, with separate reporting by sub-sector.

Some countries already apply GAAP to the production of 'extended' government accounts. These are not yet developed fully enough for international comparisons. Such accounts have more comprehensive balance sheets than foreseen in SNA93. They show unfunded pension liabilities, other provisions for uncertain future expenditure arising from past events, and consolidate subsidiaries (for example, borrowing by public corporations). If such accounting systems were more widely applied they would make possible a fuller comparison of the size of governments in terms of governments' financial obligations.

In this context the findings and proposals included in the *fiscal transparency reports on standards and codes (ROSCs)* undertaken by the IMF might be a good starting point for such comparisons. Fiscal transparency

ROSCs concentrate usually on areas like the establishment of medium-term budget frameworks, the comprehensive description of off-budget activities, effective accounting, reporting and oversight, and on inter-governmental fiscal relations. Beyond the adoption of budgetary and national accounting standards as described above, consistent and comprehensive coverage of off-budget activities is required for assessing fiscal risk and sustainability.

Off-budget is used as a broad term to designate activities that have at least a potential fiscal impact, but are not all captured in the government accounts. Beside extrabudgetary funds or autonomous agencies other off-budget activities are contingent liabilities (government guaranteed loans and other potential liabilities) and quasi-fiscal activities involving below-market pricing or non-commercial services provided by public financial or non-financial corporations. Other government obligations might be unfunded pension liabilities of public corporations. The issue to disclose such obligations in accounting statements should be clearly distinguished from their recognition as liabilities, which is a subject to continuing debate in terms of IAS.

Fiscal transparency ROSCs also recommend developing comprehensive risk statements to illustrate the impact of fiscal risks under alternative scenarios. They tend also to focus on the impact arising from quasi-fiscal activities and the implicit liabilities from a weak banking system.

5.2 Indicator-based measures

It is often mentioned that governments have considerably more influence on their citizens than the level of revenue, expenditure or debt would suggest. In most countries, governments set up and maintain operations through legislation and often subsidy, which would otherwise be undertaken by private corporations. In other cases, governments extend their influence by their granting preferential loans or import and export licenses. Finally, through their regulatory powers, governments can exercise a strong presence in the operation of the economy without their rule ever appearing as an expenditure item. In this sense the observation that the conventional measures of government size is levelling off or even shrinking may well mislead if the role of government has simply changed from one of direct spending to one of indirect influence through regulation.

Beyond accounting frameworks, various indicator-based measures have been proposed referring to the government's less-direct influence through regulation, mandates and other factors like political stability, government effectiveness or control of corruption. In that context such indicators are seen as measures for government quality, which might be related to government size.[9]

Various cross-country measures of the degree of governmental regulation, indices of government effectiveness and the degree of regulatory burden have been derived in recent years.[10] *Kaufmann and others (2002)*, for instance, describe the outcome of an ongoing project on world-wide governance research indicators, which have been compiled and published for six governance categories and 175 countries. These governance categories are voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. The results are based on seventeen separate sources of subjective data on perceptions of governance constructed by fifteen different national and international organisations and on the use of the 'unobserved components methodology.'[11]

The results indicate a rather heterogeneous picture for the euro area countries, the US and Japan.[12] While the indices for voice and accounting are highest for Finland (1.7) and lowest for Japan (1.0), the indices for political stability are highest for Luxembourg and the Netherlands (1.5) and lowest for Greece (0.8). The index for government effectiveness is also highest for the Netherlands (1.8) and lowest for Greece (0.7). The maximum value for the category regulatory quality is reported for the Netherlands (1.5) and the minimum value for Belgium (0.6) as shown in Chart 3. Concerning rule of law Austria's index value is highest (1.9), while the lowest index value is reported for Greece (0.6). Finally, the best value for control of corruption is reported for Finland (2.5), which is worst for Italy (0.6).

[9] It is also worth mentioning the literature that measures the growing size of the shadow economy and evaluates its connection with the hypothesis that the government's influence is becoming increasing indirect, impacting increasingly through regulation. See F. Schneider (2000),

[10] See Pryor (2000) and Kaufmann, Kraay and Zoido-Lobatón (2002).

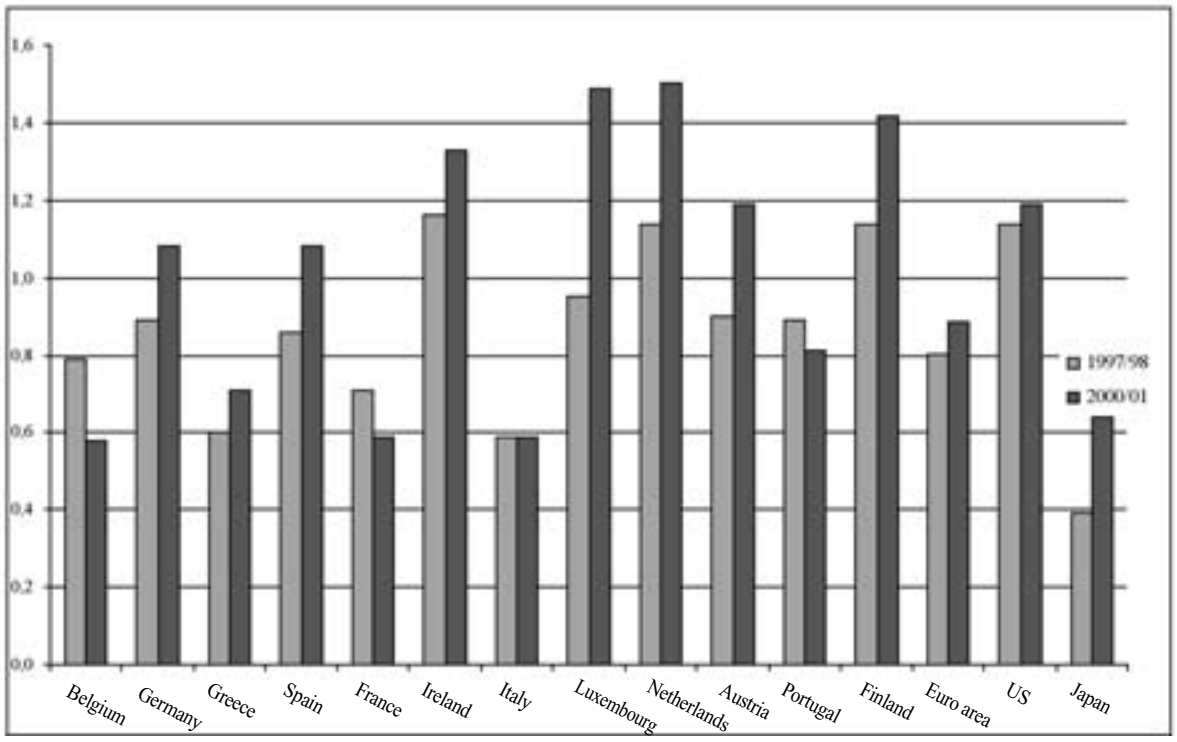
[11] This method is described in *Kaufmann and others (1999)*.

[12] Governance indicators are oriented so that higher values correspond to better outcomes, on a scale form –2.5 to 2.5. These ratings are based on subjective assessments from a variety of sources.

Comparing the results for one of the criterion, *regulatory quality of government,* for the euro area, the US and Japan shows that it is highest in the US and lowest in Japan (see Chart 3). Other rankings are achieved for the remaining criteria.

Chart 3
Regulatory quality of government in the euro area, the US and Japan

Scale from –2.5 to 2.5



See Kaufmann and others (2002). Higher values correspond to better outcomes, on a scale from –2.5 to 2.5. The ratings are based on subjective assessments from a variety of sources and are subject to substantial margins of error. Euro area figures are compiled as weighted averages with population are weights.

Beyond the ambiguity of the figures it has to taken into account that the margins of errors associated with the estimates of governance for each country are typically quite large relative to the units in which governance is measured. Therefore, cross-country comparisons of the quality of governance based on this type of data need to be made with considerable caution.

This also refers to international country risk indicators, which are highly correlated with many of the governance indicators mentioned and are often used for the evaluation of the quality of general government, its subsectors or units.

5.3 Linking measures

Linking aggregates derived from the national accounting framework with indicator-based measures, despite their shortcomings, on the size of government is seen as a challenging analytical and statistical task. It is interesting to ask whether, for instance, differences in the regulatory quality across countries can account for at least some part of the cross country differences of size of governments as measured by their revenue, expenditure or debt. More formally, does the inclusion of a measure of the relative scale of regulation or of the other qualitative categories improve the explanatory power of a cross sectional equation of the determinants of government size? Should it do so, its coefficient sign will indicate whether regulation has been a substitute for, or complementary with, the more 'traditional' measures of government size.

6. Conclusions

In this paper various measures comparing the size of the governments in the euro area, the US and in Japan have been derived from the national accounting framework. They have been shown as ratios of GDP, because other denominators are seen as less appropriate for international comparisons.

Despite the various methodological differences between and shortcomings in the national accounting systems there is some evidence that the size of the government in the euro area and in Japan is larger than in the US. While monetary measures based on government revenue and expenditure show a larger size of government in the euro area than in Japan, the opposite applies if looking at general government debt. Japanese government debt as a percentage of GDP is comparably high and has increased significantly during recent years, while it was rather stable in the euro area and the US. Turning to non-monetary measures, no complete and harmonised data are available on the number of employees working in the general government or public sector. This also applies to indicator-based measures, which are associated with large margins of errors avoiding any reliable comparison across country and time.

Further statistical work has to be done to amend the existing accounting standards and implement them. This would also cover the collection of additional data for compiling public sector accounts useful for international comparisons.

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UNCOVERING THE DIMENSIONS OF THE COMMON GOOD - PROBLEMS OF MEASUREMENT OF THE SIZE OF THE PUBLIC SECTOR

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1. Introduction

The core functions of the public sector are general organisation of society, legislation, defence and safety. The management of these duties has been organised through a political-administrative process into the public sector. The sector has also taken on many other duties outside these core functions diversely in different countries. The functions of the public sector change in the course of time even within the same country. Therefore, it is important to find out how large this sector is in our national economy.

In 2000, public expenditures in relation to GDP accounted, on average, for 46.4 per cent in the EU countries, the range being 32.6 to 57.7 per cent. The total tax rates varied between 31.1 and 54.2 per cent, the average being 41.6 per cent. Public consumption expenditures in relation to GDP fluctuated between 13.4 and 26.2 per cent, with 19.9 per cent being the average. Among all of these the figure was the lowest for Ireland and the highest for Sweden. Public investments in relation to GDP were the highest in Greece (4.1%) and the lowest in the United Kingdom (1.2%). On average, there were 74 public sector employees per 1,000 inhabitants in the EU countries in 2000, varying between 47 (Greece) and 152 (Denmark). (See Appended Table 1).

The indicators give a very divergent picture of the size of the public sector. This naturally leads to the question of how the size of the public sector should actually be measured. Is there some 'best' or 'right' indicator for the public sector size? What problems does this measurement involve? The purpose of this paper is to discuss this problem.

The following indicators are generally used for measuring the size of the public sector: total tax rate/GDP, total public expenditures/GDP, public sector value added/GDP, public consumption and investment expenditures/GDP, public sector employment as a proportion of total employment and transfers/GDP.

All these indicators describe the size of the public sector from the viewpoint of the current activity, that is, economic flows. In this case annual public expenditures, revenues and taxes are measured. It is also possible to view the public sector size from the point of wealth. Then the examination concerns economic stocks, public sector assets and liabilities and future obligations and problems related to their calculation. The wealth approach is useful particularly when assessing the sustainability of the public economy. For example, the EMU Stability and Growth Pact requires both approaches (the criteria set for public economy deficit and debt).

Technically, the indicators are expected to be reliable and comparable. Reliability means that what is meant to be measured is measured correctly. Comparability is needed at least in three dimensions. Inside each national economy it is vital to obtain comparable information on different time periods because the functions and the role of the public sector change in society with time. We want to know what has happened to the size of the public sector with the passing of time.

Secondly, we want to compare the public sector sizes between different countries. The rank and order of countries in international comparisons changes when different indicators are taken in use. This reflects the fact that public sector structures differ substantially between different countries. The problem is to create comparability between differing systems.

An important point of comparison relates to comparing the mutual sizes of the public and private sectors. Certain services, such as health and education services, can be provided either through the public or private sector. We may be interested in knowing what share the public sector has in the total supply of these services in different countries and what effects these differences have.

The way the public sector is treated in national accounts (SNA, 1993, ESA, 1995) forms a conceptually coherent whole that lays a good foundation for measuring the size of the public sector. The accounting provides a consistent and in many cases even a very detailed picture of the functioning of the public sector. However, from the viewpoint of measuring the public sector size, the present SNA (System of National Accounts) has shortcomings and problems.

In the literature, the shortcomings of the public sector size indicators have been examined separately from the perspectives of social expenditures, public sector financing and tax system (particularly of tax expenditures). The OECD has examined especially the comparability of social expenditures and tax expenditures. There are differences between public expenditures on cash basis and accrual basis. Particular interpretation difficulties arise from those public sector measures that do not generate public cash expenditures and are therefore not registered in budgets. These measures can, however, have significant economic effects. Examples of such off-budget measures are debt guarantees and economic regulatory measures.

Much literature can be found on the above-mentioned special questions, but there is less literature where different viewpoints are united from the point of size measurement. This paper aims to produce such an overall view.

This paper first examines the fundamental problems involved in size measurement. They relate to the definition of public sector institutions, the scope of public sector activities and the commodities produced by the sector.

The problems connected with the differences of tax systems and tax subsidies will be studied next. After this I will discuss the comparability of public expenditures and measurement problems brought about by public regulation and other off-budget items. Towards the end of the paper the public sector size will be viewed from the point of wealth measurements.

This paper does not attempt to be comprehensive in handling this problem. My intention is not to present a manual on how the size of the public sector should measured, but rather to raise points of discussion related to the issue. Some other writer might come to a very different conclusion on this theme.

2. What is the measurement of the size of the public sector needed for?

2.1 Needs of the economic policy and research

What are the size measurements of the public sector needed for? Measuring the size of the public sector is important with regard to the needs of both economic policy and research. In economic policy the key issues are those related to the dimensioning of the public sector, that is, questions connected with the tax rate and the level of public expenditures. The EMU sets framework conditions to the development of the public economy. On account of economic policy decisions, it is often necessary to compare the size and development of the public sector over time nationally as well as internationally.

The research relating to the public sector is interested in how the size of the public sector influences economic growth, income distribution and efficiency. This gives rise to at least the following needs.

- Measurement of the tax burden.
- What effects does the public sector size have on the growth of the economy?
- What effects does the size of the public sector have on economic fluctuations? Is a large public economy a stabilising factor for the national economy?
- In what way does the public sector size influence the productivity and efficiency of the national economy?
- How does the size of the public sector correlate with various social indicators describing the standard of living (e.g. life expectancy, health and literacy)?
- What is the connection between the public sector size and income distribution?

It would be easy to go on with this list of relevant questions. From the viewpoints of both research and decision-making we are interested in how the size of the public sector influences the development of the rest of the national economy and, on the other hand, how the development of the national economy influences the public sector size. The influence can thus go both ways. Interest may be directed to both the macroeconomic effects connected with economic growth and business fluctuations and to the microeconomic effects related to the efficiency of the national economy.

There is probably not much disagreement among economists as to whether the public sector has any significant effects on the national economy. Agreement diminishes, though, when it is looked more closely where the effects are the largest. In the golden age of Keynesianism weight was given to the macroeconomic effects of finance policy. Some recent studies have emphasised that the size of the public sector has really big efficiency effects but the macroeconomic effects and the benefits of the active fiscal policy are small. (See e.g. Lucas, 2003)[1]. The high tax burden and the large public sector are often considered to slow down economic growth. The efficiency argument often voiced claims that when the tax rate rises, the volume of dead-weight losses of the national economy will grow faster than the tax rate. One study found that both small and large public sector sizes are connected to greater economic fluctuations than medium size (Koskela - Viren, 2003).

A wide array of research literature has searched for reasons for the growth of the public sector size. A popular hypothesis has been the behaviour of the so-called median voter. This is based on the idea that as a consequence of majority decisions, the size of the public sector corresponds to the preferences of the median voter in a democratic society. On the other hand, we have hypotheses on the supply of public commodities, such as the Baumol hypothesis. According to it, a slow growth of productivity is typical of public production. This is followed by a fast rise of relative prices in the public sector, which raises production costs and the size of the public sector. The traditional Wagner's law dating from the 19th century is a hypothesis based on the income elasticity of demand; the income elasticity of the commodities produced by the public sector is more than one, which leads to growth in its relative size. The most recent studies have focused on the level of decentralisation of public administration, budget discipline and budgetary procedures and several other political factors. Empirical research appears to support the Baumol thesis, while Wagner's law has gained only little endorsement (Holsey & Borcherding, 1997).

Several central economic theories are thus involved in the size of the public sector. For testing the research hypotheses it is, of course, important that the public sector size has been measured in a relevant and comparable manner with regard to the hypothesis. Comparison problems concern both comparison of data between various countries and comparison between different time periods. Standardisation and comparability of statistical measurements are thus vital. Science cannot advance if measuring is not made properly.

2.2 What units are used for measuring size?

Size is not an unambiguous quantity but it can comprise several different dimensions. People's size can be measured in terms of height and weight. Both are measures of size but together they give a fuller picture. Capacity, density and so on can also be included in the measurement.

The size of the public sector can also be measured in different dimensions. In principle, the measuring units can be money, employment or welfare.

Economic quantities are usually measured as monetary quantities. Size can then be the ratio of public expenditures to GDP, for example. But should the bases of size measurements be public revenues or expenditures? Which are the relevant expenditure and revenue concepts? To what degree are the public sector's internal business activities netted? Monetary indicators involve several comparability problems, which will be discussed later in this paper.

Besides monetary indicators, the public sector size can also be viewed from the point of labour input. In that case it is calculated how many people work in the public sector, which is then compared with the labour force in the whole national economy. But what is thought of the fact that public current transfers are used to finance

[1] According to Lucas, the steady public sector has stabilised the macroeconomic fluctuations since the Second World War. He considers, however, that an active balancing of additional fluctuation produces only very few welfare benefits. Instead, the dead-weight losses caused by taxation are great and thus the public sector has significant allocation effects.

those working in the private sector? For example, several private non-profit organisations employ part of their staff with the help of public subsidies. The condition for the subsidy can also be that these organisations perform functions assigned to them by the public sector. In this case, to take account only of the labour force working in the public sector can give a very biased picture of the scope of public sector activities.

We are naturally also interested in examining the public sector from the point of welfare. Welfare is often described by means of various social indicators. What is the connection between the public sector size and welfare? Besides objective indicators, use of qualitative indicators is also feasible. Such could be, for example, people's opinions about the size of the public sector. In the following, we will mainly focus on monetary indicators. Employment and social indicators can, however, be useful in supplementing monetary measurements.

Nevertheless, we will soon come to the conclusion that it is not easy to present a single indicator for the size of the public sector. The purpose of measuring comes to the picture almost at once: from what perspective do we want to measure the public sector size? Therefore, we must first decide on the most relevant measuring method for our current set of questions.

3. Public sector institutions, activities and commodities

3.1 Public sector as an institution

In measuring the size of the public sector, we have to start from the definition of the sector itself. This concerns the definition of the institutional sector in the present national accounts. Is there something to be desired in this respect?

The public sector covers organisations related to the administration and organisation of society. In a democratic society the functioning of the public sector is based on the authority obtained in elections to organise the matters of society by virtue of law.[2] The public sector is thus a fundamental organisation from the point of the functioning and organising of society. The public sector also has a unique feature: it has a statutory right to collect taxes for financing its activities.

In practice, the public sector is comprised of very different organisations of various levels. It covers central administration and lower level regional and local administrative structures. It also includes supranational functions, which are relevant in the EU, for instance. In the SNA compulsory social security funds are also included in general government. In practice, there can be funds in other sections of the public sector as well. Only some public administrative units have legislative power. A considerable part of public sector organisations exist for the execution of laws and government policy.

The SNA (1993) separates central government, state government, local government and social security funds these form the concept of general government. In these respects the definitions should be in order.

In contrast, supranational administration is not a sub-sector of general government. But should supranational functions be considered when defining the size of the public sector? To what extent do EU functions have supranational features and should this be taken into account and in what way? One example of these is payments and customs duties paid to the EU or other supranational bodies. The OECD presents these in separate tables in its tax statistics. Payments to the EU are not regarded as taxes but payments to an international organisation. On the other hand, the EU has limited budgetary and legislative powers. This goes beyond the conventional nation-state concept. Should this portion be omitted from the nation-state's public sector? As with the deepening integration, the role of supranational or joint EU decision-making is gaining more emphasis, this matter should also be discussed clearly in the definitions of the public sector.

Besides social security funds, other public sector activities are often organised in the form of funds. Such can be funds established for public financing of investments into housing production and agriculture, for instance. For international comparability, it is relevant how the finances of these funds are calculated into total public expenditures. Comparability of public sector expenditures is not realised if in one country public housing loans are entered into expenditures gross and in another country, where funds are used, only the fund surplus or deficit (difference of loans granted and repaid) is recorded in total public expenditures.

[2] The public sector can in principle be defined in non-democratic societies as well. The basic functions of the public sector are similar in all societies that are organised in some way. This matter needs not be discussed any further in this connection.

The broad public sector also comprises public enterprises and public corporations. In the present SNA these activities are included in non-financial and financial corporations. It is relevant to include public enterprises when examining the public sector size. Otherwise the description of the national economic role of the public sector would be incomplete.

3.2 The scope of public sector activities

In addition to the definition of public sector organisations, another important basic definition is related to the definition of public sector economic activities. To form an optimally comprehensive picture of the size of the public sector, we need a concept covering the whole scope of the activities. There our starting point should be the question: for what matters is the public sector responsible in society?

Economics literature discusses in length the bases of public sector activities. Economic arguments for public activities concern the incompleteness or nonexistence of markets. These shortcomings are due to natural and other monopoly situations, imperfectness or asymmetry of information, or they are connected to the characteristics of the commodities produced by the public sector.[3]

In practice, various political and non-political factors have an effect on the public sector size and its scope of activities. Political factors reflect people's different preferences and selections. Non-political factors are rather of technical nature, related to the quality attributes of commodities or the functioning and nature of markets.

According to Pigou (1947), the size of the public sector can be viewed from two different angles. First, the use of resources in the public sector's own production can be examined. These are so-called exhaustive expenditures. They are expenditures that are absent from the other uses of the national economy. They concern the public sector's own production, whether collective or private services or investments.

In addition to exhaustive expenditures, Pigou claims that the public sector transfers resources from one national economy sector to another. These are transfers that have no effect on the size of the national income. They are redistributive expenditures of resources and, according to this view, they do not influence the size of the public sector.[4]

Public sector activities can thus be described from two viewpoints: 1) the public sector as a producer (direct use of resources in the public sector), and 2) public sector as a redistributor of income and wealth. From the producer viewpoint, the correct way to measure the public sector size would be to examine jointly the value added of the public sector, that is, public production, unemployment and public consumption and investment expenditures. From the viewpoint of redistribution, the relevant indicator is transfers.

Pigou's approach did not, however, consider the fact that the public sector also issues several decrees concerning the private sector in the form of laws and norms, which influence the allocation of economic resources in society. This activity can be called public regulation and it can take on a wide variety of forms. Various regulatory measures have significant economic effects. In measuring the size of the public sector it can thus also be considered whether public sector regulatory measures should be included in the examination. I will return to this question in Section 6.

In addition to production, current transfers and regulation, in recent years public and private sector co-operation has become more common. In this co-operation the public sector acts as an organiser or a commissioner (public provision), but not necessarily as a producer. These are called public-private partnership projects (ppp projects). The government wants to carry out some project or programme but does not necessarily produce it, or finance it. The conventional concept of the public sector is thus extended from production and current trans-

[3] Stiglitz (2002,p. 350) points out '…it is now recognized that market failures are pervasive – markets do not result in (constrained) Pareto efficient outcomes whenever markets are incomplete or information is imperfect, that is, always…Such a wide compass for intervention provides insufficient guidance to what government should do.'

[4] We may comment here that this view is not exactly accurate. Public transfers have a two-way effect on the real economy. First, according to the theory, public taxes and transfers cause dead-weight losses in the national economy. As a result of transfers, the real level of national product thus changes. The magnitude of the change is in turn dependent on how large these dead-weight losses are. On the other hand, it is known on the basis of the theory that the dead-weight losses of, say, taxation do not grow linearly. If the dead-weight losses grow by the square of tax base, for example, they grow quite strongly with the growth of tax basis. Transfers also have an effect on the supply of labour and capital (saving) and these effects also change the size of the national income.
As is well known, there is no simple way of measuring dead-weight losses and the supply effects of labour. Thus at the operational level it is apparently not possible to include these measures in the calculation of the size of the public sector.

fers to organising of and taking responsibility for matters (public provision). Because of this, should the concept of the public sector activity be renewed in statistics? Public provision covers all conventional public expenditures but in addition, the examination also includes the projects commissioned by the public sector but implemented and financed by the private sector. Public provision offers a broad view on the role of the public sector in society. But what could this mean in practice/operationally in the definition of public activity?

Analogous cases with ppp projects relate to social insurance. These appear when the compulsory pension insurance required by legislation is organised in the form of private social insurance. According to the current practice, compulsory social insurance belongs to the broad concept of the public sector and they are also included when defining the EMU criteria. With regard to the tax rate, it can be relevant whether the difference between payments and benefits is to be considered as taxes.

3.3 About the special characteristics of commodities produced by the public sector

The public sector produces commodities that have specific characteristics which often correct the incompleteness of markets. Such are: public goods [5], club goods, externalities and merit goods.

Public or collective goods are such in nature that their production inevitably benefits all citizens and from the use of which no citizens can be excluded. A typical example usually given in this connection is national defence. Due to the free rider characteristics related to collective commodities, it is often considered that the public sector must itself produce these services. This is not, however, always the case. A country may have a hired army but the public sector is in charge of setting up such an army. The SNA identifies collective commodities (the concept 'public goods' in economic theory, SNA, 1993, paras 9.43, 9.92 by the concept 'collective consumption services'). According to the SNA, non-profit private institutions can also produce collective services but for the sake of simplicity, the entire production of the sector is treated as individual consumption.

Club commodities (Cornes and Sandler, 1996) are commodities that share the above characteristics of collective commodities but serve only a limited group of people. These may be connected to local government activities, for example. In fact, many non-profit sector commodities may be such club commodities by nature. At present, these commodities are difficult to identify from national accounts.

Externalities (Cornes and Sandler, 1996) are economic effects – advantages or disadvantages – that producers or consumers directly generate to other economic actors by their activity outside the market mechanism. A typical example can be environmental pollution caused by an enterprise. In such cases one reason for the effects may be deficient ownership rights in the commodity markets. An example involving a private person could be smoking by some person that causes lung cancer to his or her room-mate as well. According to Pigou (1960), the public sector size becomes too small because the positive externalities produced by it cannot be taken into account in budgets. Externalities are interesting but their measurement has usually proved quite difficult.

Merit commodities are such where it is considered that the person concerned cannot self reliably assess the need for a commodity, or his or her preferences are in some way inadequate, and therefore society must be in charge of producing these commodities (Musgrave, 1959). These commodities may be such as free school meals, free education and many health care-related commodities. Markets produce such commodities but insufficiently, in the decision makers' estimation. It can be thought that citizens do not know what is best for them and therefore the government must intervene in these markets. This can also be justified from the viewpoint of asymmetrical information. For example, in case of an illness the patient and the physician have a very divergent knowledge basis for treating the illness and thus it must be ensured that the required treatment is given.

Inadequacy of preferences is not, however, unquestionably the basis for producing merit commodities. This same phenomenon can be explained by the view of the public-choice school through various interests in the society. This school of thought claims that teachers, for example, want to have more education services as they will thus get employed better and the growing demand for teachers will also increase their pay. There is no indisputable way to separate all the factors influencing the size of the public sector.

[5] It may be noted that a term public good is well established in economic literature. In statistical terminology however, we differentiate between goods and services, which taken together are commodities. In fact most of the public goods are services and therefore collective services are in this terminology collective commodities, not goods.

In practice, the public sector thus produces many private commodities in addition to collective services. Similarly, the private sector can produce collective commodities besides private commodities. Discovering these 'product mixes' and their economic role is relevant for the development of public sector structures but it can also help to understand the development of the public sector size in different countries.[6]

4. Problems connected with the total tax rate indicator

The gross tax rate is a very commonly used indicator of the public sector size. It shows how large the total tax returns are in relation to GDP. This indicator is often referred to in economic policy debate.

The indicator, however, includes characteristics that render it not directly comparable between different countries. These are due to differences in the taxation structure. Therefore we need to examine the following topics: taxation of current transfers, public sector internal taxes, current transfers, taxes between different administrative levels, current transfers and tax subsidies. A good source describing the differences in the tax systems of diverse countries is Messere (1993).

Taxation of current transfers

A significant item influencing the gross tax rate is the taxation of current transfers. In some countries the current transfers paid by the public sector are exempt from tax, in some countries taxes are paid on them. Tax exemption or taxability of current transfers has an effect on the comparability of the tax rate between different countries. For example, in some countries unemployment benefits are exempt from tax, while in some other countries direct taxes and social security contributions are paid on them. Then a comparison of the gross benefits gives a distorted picture of the real level of unemployment security.

In addition to taxes and social security contributions levied on current transfers, taxation also influences the amount of social expenditures according to whether indirect taxes are paid on social security services or to what degree the tax system includes social benefits (tax benefits or tax expenditures) granted through taxation. The indicators developed for measuring net social costs measure how much governments actually channel funds into net public social expenditures and what part of the national product the recipients of social benefits actually receive (net total social expenditure). To account for this difference, gross and net social expenditures over GDP have been calculated in the field of social security in OECD countries. About the methodology of calculation of net social expenditures and its development, see Adema, 1997 and Adema, 2001.

Indirect taxes also influence how social security expenditures benefit the recipients. Thus, the OECD framework also takes account of the portion of private consumption expenditures going to indirect taxation. The reason for this is as follows. If in country A the value added tax percentage on private consumption is 10, this country has to pay a gross benefit of around EUR 111 to the recipient to get a net benefit of EUR 100. Similarly, in country B with a value added tax percentage of 20 the gross benefit has to be EUR 125 to attain a net benefit of EUR 100.[7]

The influence of taxation on net social benefits is illustrated by the figures calculated by the OECD in 1997 (See Appended Table 1). The difference between gross and net benefits varies by country from 2 to 9 percentage points to GDP. The difference is particularly large in the Nordic countries of Denmark, Sweden and Finland.

Another advantage with net social benefit calculations is that this framework allows comparison with compulsory, statutory private social expenditures and voluntary private social expenditures. When private expenditures on social security are taken into consideration, the United States, for example, comes close to many European countries.

Calculation of net public social expenditures produces problems. The methods used for this vary. For example, in the United Kingdom social benefits and household-specific and individual-specific micro simulation mod-

[6] As is well known, in Sweden the role of public health care and education services is much larger than in the U.S. But when public and private health care and education services are added together, their ratio to GDP is almost equal to that in Sweden.

[7] In comparison of net benefits, account should, of course, ultimately also be taken of the purchasing-power-parity of the benefit, which depends on the local price level.

els containing taxation have been used in calculations. Then again, calculations have also been made utilising the average tax rates.

Taxes of regional local government, public sector reforms and volume of services

International comparability of tax statistics is also considered to suffer from the differing ways of collecting local taxes: 1) tax revenues are collected entirely at the level of central government, 2) both by local and central governments, or 3) computationally by dividing the central government taxes to various tax recipients.

In many countries the taxation and state subsidy systems between local government and central government have been reformed strongly (Stoker, 1997). Then the service standard provided by local government may also have changed. This may arouse discussion on whether the service standard has fallen in the course of time.

It is conceivable that the reforms have increased the efficiency of local government and thus the service standard has not necessarily gone through similar changes as financing of local government has. In order to resolve this matter, measuring the volume of public services comes into question. Volume measurements could be used to account for the development of the volume and quality of the public services over time. As is well known, measuring the production of the public sector is a difficult task. This issue cannot, however, be pursued any further in this connection. The SNA (1993, paras 16.133-141), however, recommends volume measurements on the outputs of health care, social welfare and education services. This recommendation is highly desirable.

Public sector internal taxes

This issue has to do with how indirect taxes included in the public sector's internal business transactions, such as value added taxes, should be taken into consideration when defining the size of the public sector. In international comparisons differences may be caused by dissimilar tax practices of these transactions.

Taxes, payments and consumer fees and excesses are alternative ways of financing public expenditures. Their differing roles and use in different countries may also cause problems in international tax rate comparisons.

Cash and accrual based transactions

The magnitudes of both annual tax revenues and public expenditures are influenced by whether transactions are registered on cash basis, i.e. when they are actually paid, or on accrual basis, i.e. when the obligation for paying the tax or expense is produced. The OECD has decided to adopt accrual-based statistics in its statistics production, although empirical studies show the differences between cash and accrual-based taxes to be small.

Production of cash-based and accrual-based statistics is significant mainly for short-term examinations where the differences can be even substantial. Then again, it is apparent that the differences have not much of a significance for the long-term development of the public sector size.

Cash vs. accrual basis is also relevant on the expenditure side. This is especially important in the calculation of public assets and liabilities, which will be considered in section 7.

Tax subsidies

Possibly the most important difference in international comparisons of the tax burden is due to the extent a country uses tax subsidies (or tax expenditures) as part of the tax structure. Tax subsidies are subsidies paid through the tax system. For the object of taxation tax subsidies are either tax exemptions, deductions from the tax basis or taxes, tax credits or tax rate concessions, such as lower tax scales for certain purposes or postponement/suspension of tax payment.

A country using numerous tax subsidies in comparison to a country using direct subsidies can in principle have a considerably lower tax rate than the comparison country, although in both countries the effects can be quite similar.

Tax subsidies were taken into account in the OECD's calculations of net social subsidies. It should be noted, however, that a large amount of tax subsidies is also used for the promotion of business. These will be discussed later in this paper in connection with public expenditures when referring to financial support to industries.

Certain technical problems are involved in the measurement of tax subsidies. They require selection of the so-called normal tax system or the norm tax system. Deviations from this are either tax subsidies or sanctions (i.e.

tax expenditures or tax sanctions). Problems may be caused by that first it is difficult to agree whether it is a question of a tax subsidy replacing some direct expenditure or of a characteristic closely related to the tax system. Second, measurement problems arise because tax expenditures cannot be directly observed. Therefore various methods have been developed for their measurement, which may produce divergent results.[8]

In 1995 the OECD examined the budgeting systems of tax subsidies in 14 countries. Opinions differ as to whether tax subsidies can be added together. As mere current transfers give an erroneous picture of the government support, taking account of tax subsidies may nevertheless provide a better, though not a wholly accurate image of the amount of the subsidy.

In Finland tax subsidies have been calculated regularly for many years. Their effects are considerable when converted into monetary measures. It is also typical that tax expenditures are allocated to specific sections of the public sector. These are particularly in use in the fields of housing, environmental policy and social security. In Finland more than one half of tax subsidies go to these areas. The situation may, of course, be different in other countries.[9]

5. Questions related to measurement of total public expenditures

The comparability of public expenditures is good in many respects due to the recommendations of the SNA and ESA. There are, however, some entities that cause bias or distortions to measurements. Examples of these are the financial support granted by the public sector to enterprises and other sectors, treatment of business activities and funds, ppp projects and other possible off-budget projects.

Public financial support

The public sector often acts as a financier of business activities or housing production. Public financing often includes some support element. This may be comprised of long loan periods, years of grace, reduced interest rates and public warranties and guarantees. Some of these measures are not shown as cash expenditures and thus they are not included in budgets and in monetary indicators of the public sector size.

To attain comparability, financial support should be calculated by utilising a harmonising method. Several methods have been developed for calculating the support elements of financial support. Some of them examine the matter from the viewpoint of the public economy. Alternatively, the measurement can be made from the point of the recipient. These indicators do not necessarily yield the same end result. In this connection it is not necessary to go any further into the measurement techniques of the financial support element.

Public sector internal rents

Over the past few years, a government real estate company has been established in Finland, which has the right to collect rents on buildings owned by the state. If such a building previously housed a government agency, it did not pay any rent, but nowadays it has to budget and pay a rent. This rises the public sector expenditure level. These expenditures are, however, public sector internal transfers and as such they should not have any direct impact on the size of the public sector. Therefore they should not be visible as growth in the public sector size either. There may be long-term effects if the agencies try to save in rent expenditures because of having to pay a rent. This may take place by moving into smaller or less expensive premises. This efficiency effect is difficult to observe in practice, however. There may also be other types of "double accounting". For example, in the Finnish central government budget various organisations record pension contributions as their expenditures,

[8] There are three principal ways to measure tax expenditures: 1. Revenues foregone. This is the amount by which tax revenue is reduced by a particular provision. 2. Revenue gain. This is the amount of expected revenue in case the provision is abolished. 3. Outlay equivalence approach. This is the amount of direct expenditure that would be required to compensate the abolishment of a particular tax provision. Some of these methods require assumptions concerning the behaviour of the taxpayer in different situations, and therefore calculations may not be accurate. There are several methodological issues involved, which are not possible to pursue here.

[9] The objective of Denmark's tax subsidy study for 1993 to 1998 was to examine tax subsidies together with direct subsidies and predict future tax subsidies. The norm tax system of tax subsidies was based on the concept of the comprehensive income tax base. Tax subsidies were calculated by the method of lost tax revenues and the income equivalence method. In Denmark tax subsidies caused by depreciation in business taxation were not included in the calculations. However, tax subsidies in business taxation (business development, etc.) were the highest ones, around 60 per cent, of all tax subsidies. Tax subsidies are presented as percentages of GDP, and they were calculated by a detailed macroeconomistic model.

and the ministry of finance includes state pensions as its expenditures. There is double counting since most of the pensions are finances from these pension contributions on pay-as-you-go basis.

Public enterprises

The public sector also practises for-profit operations in various enterprise forms. The motives for public enterprises can, however, differ much from those of private business enterprises. These can be such as employment reasons, acquisition of revenue (fiscal monopolies), imperfectness of markets or acquisition of investment revenue for the public sector.

Public sector enterprise forms can be government enterprises, public companies and public investments in private securities, which can cover both portfolio and direct investments.

Public companies are not included in general government and therefore it is not easy to examine them by means of national accounts. In principle, we may be interested in adding this portion to the scope of the public sector. It may be particularly interesting to find out the total amount of public investment activity, which covers both portfolio investments and direct, permanent investments. Separation of these is not in practice easy and it can often be unclear for which purpose the government has made the investment in the end.

The public sector also has fiscal monopolies, where the purpose is to produce revenue for financing public expenditures. These ought to be discussed in connection with taxation.

Public – private artnership projects

Although the public sector is in charge of a certain matter, it need not necessarily produce it. The government can, for example, commission some infrastructure project, such as a road, from the private sector. In partnership projects the implementation of the investment is given to the private sector. In them the public sector transforms investment expenses into current expenses. This takes place so that the public sector pays annual usage charges afterwards to the private sector. These payments are based e.g. on the usage volumes of the investment, in the case of road the annual charges can be based on traffic volumes. The important financial question is who carries the risk incurred by the investments, whether it will remain with the public sector or be transferred to the private sector.

If the project is also financed by the private sector, the measure is not visible in the public budget as expenditures and revenues even if the activity was directly caused by a public sector decision. Often these projects involve an agreement that the government will at least partly reimburse the private sector for the costs of the investment. The size of the public sector grows later through these payments. If the investment is partly financed by user charges, the investment as a whole will not even then be included in the public sector budget.

Through public compensations, the project will become part of the public sector in the course of time and at least in this way it will enlarge the public sector. In the flow examination the public sector size grows only later when the investment starts to produce services. According to the conventional implementation method, when the public sector itself makes an investment, the size of the public sector increases already at the implementation stage. I will return to this question again in connection with the wealth examination.

These partnership projects mainly change the time profile of the public sector size. Public investments first fall (because they are made by the private sector) but later public expenditures grow when the public sector starts paying compensations back to the private sector. It may well happen, though, that investment expenditures and compensations do not correspond to one another and the public sector size will also change as a result.

6. Public regulation

In the past few decades there has been a strong increase of regulations in the developed countries. These mainly concern the environment, health and safety. Regulations usually take the form of public sector norms. The norms oblige economists to take up certain measures. Execution of the norms has direct economic effects, but they are visible partly, only indirectly, or not at all in public budgets. Regulations can be used as alternative instruments for taxes, expenditures or subsidies (e.g. the environmental tax can be replaced by an order). Then again, the need for regulations has at times been seen to grow after privatisation measures as well. In the pri-

vate sector the economic effects of regulatory norms are visible in prices and costs but they are not generally connected to the size of the public sector.

Positive regulatory measures aim to improve the welfare of consumers. Restrictions to competition are, in turn, estimated to cause welfare losses to consumers. Therefore e.g. the EU's internal market programme intends to remove competitive restrictions and thus improve consumers' welfare. A significant area of regulation is world trade restrictions, of which the most significant are restrictions to agricultural trade. These quantitative restrictions raise costs and prices, thus causing welfare losses to consumers. Producers can then receive regulatory rents.

The effects of regulations have been measured in examinations related to border protection of agriculture (OECD). The OECD has also studied the economic effects of harmful regulations and deregulation of markets. The studies show that if the regulation is left unquantified, a considerable part of public sector economic effects will be neglected.

Measuring the effects of regulations is a very complicated task and no uniformly accepted standard methodology has yet been created. This does not, however, eliminate the fact that it would be useful to develop a common measurement methodology for this field, in the same way as for tax expenditures. This would make it possible to include the effects of regulations in a logical manner in the measuring of the public sector size.

The focus areas of public activity may change with time between public sector expenditures and regulation. This occurs in connection with the deregulation of markets, for example. There is thus a distinct need to develop indicators describing policy changes in the course of time between direct budgetary activities and regulatory measures. If they were measured, our conception of the public sector development might change. Or alternatively: without these measurements our conception of the role of the public sector would become biased.

7. The size of the public sector from the viewpoint of national wealth

The public sector size can also be examined from the perspective of national wealth. This introduces important new viewpoints. First, economic studies have raised the question of how productive the capital of the public sector is. Public sector investments are mainly infrastructure investments whose allocation to certain consumers and entrepreneurs is difficult. For example, road investments benefit both travel to work, free-time consumption and the transport needs of businesses. Public investments indirectly improve the productivity of the private sector. This view should be taken into account when examining public investments. Therefore, measuring of public capital in an appropriate manner is important.

Second, public debt is a significant norm for the European Economic and Monetary Union. Therefore, it is vital that public debt is measured correctly for the EMU criteria and that it also offers a relevant indicator from the point of management of monetary policy.

The third important policy approach is related to the ageing of the population and the related preparedness for public pension and care service expenditures. These can be thought as future obligations that should be taken into consideration appropriately when estimating the sustainability of the public economy in the longer term.

In the field of environmental policy there are also long-term obligations that can be significant for the long-term sustainability of the public sector. A concrete example of this is the Kyoto Protocol. In all, considering the above-mentioned needs, it can be said that the wealth examination of the public sector has increased its economic policy relevance.

Loans receivable taken into account

Public debt and changes in it have assumed an important role in the EMU, which has restrictions both for public economy deficit and debt. Interestingly, the public EMU debt is defined as gross debt. In many countries the public sector can also have loans receivable, however. Net liabilities can thus differ significantly from gross liabilities. If public sectors in different countries differ much as to their wealth operations, this means that the present debt concept may handle different countries in a very different way.

Calculation of net liabilities is not without problems either. By its nature, public lending is often so-called soft credits. This means that they can include a subvention element of some degree. This subvention element can

comprise of favourable loan periods, years of grace, reduced interest rates, guarantees or possible remission of part of the debt when certain conditions are met.

The above-mentioned subvention element must be estimated to establish the public sector's net wealth position. For example, it was estimated in Finland about ten years ago that the public sector loans receivable included nearly one third of the soft subvention element. A separate survey would be needed to study the situation in the other EMU countries.

Commitments directed to the future

In addition to public debt, other public sector legal commitments are directed to the future. The most important of these are the pension commitments discussed above. In principle, all the public sector law-bound commitments are such. Their definition is not that easy, however. They can be quantified by means of generation accounts. Generation accounts provide a comprehensive dynamic viewpoint on the future of the public sector. This can be used as a kind of comparison basis when making forecasts for the future of the public sector. A good review of generation accounts in the EU countries is given in the publication *European Economy*.

Are partnership obligations public debt?

Partnership agreements between the public and private sector were discussed above. Do they generate public debt?

We noted above that projects have an effect on the size of the public sector only when the government starts paying for the projects carried out by the private sector. This can happen even much after the project has been started. In principle, the public sector commits itself in the project agreement to these compensations and cannot denounce them even later. Therefore such an agreement is analogous with debt. It can be with reason stated that partnerships are compulsory obligations directed to the future, which should in fact be treated as public debt.

8. Summary and conclusions

Three basic dimensions have to be taken into consideration in measuring the size of the public sector. The first is the institutional definition of the public sector. Second, the various public sector activities that have economic effects have to be taken into account. Third, the commodities produced by the public sector and their characteristics are to be examined.

The definition of the general government does not produce any major problems. If public enterprises are to be combined with general government, definitional problems may appear as to when an enterprise is considered public and how the functions made purely as financial investments are taken into consideration. In principle, it is also interesting how the supranational public sector (EU) is viewed when defining the size of the national public sector.

The functions of the public sector are diverse and their definition and measuring method influence the size measurements of the public sector size in an essential way. The scope of the public sector activity comprise the following elements:

- Direct public expenditures. These are consumption and investment expenditures, current transfers and subsidies and public debt management.
- Taxation. Tax practices can be different in different countries. One important question is the taxation of public current transfers. In some countries they are exempt from tax and in some subject to tax. The effect on the tax rate can be considerable. Tax subsidies are various public sector measures implemented in the tax system as tax concessions for specific purposes that decrease the revenue from taxes and the tax rate. These factors produce significant changes in the tax rates of different countries.
- In place of taxes the public sector can use the enterprises it owns to finance some measures. This is a fiscal monopoly that has a surplus in prices which can be entered as income in the public coffer.
- Public financial support. This is used to lower private sector financial costs from what they would become through competition on the loan markets.

- The public sector obligation to the private sector regarding some measure, such as collecting of social security contributions for the financing of certain social security benefits.
- In the so-called partnership projects of the private and public sectors the private sector carries out and finances some project for which the public sector later pays a certain compensation. Thus the obligation directed to the future arises. The public sector will not at first experience any costs for the projects but the expenditures incur only later.
- Pensions and other public sector long-term future commitments can be regarded as similar future-oriented obligations. This essentially involves the question of whether the measurements are to be made on cash flow basis or commitment basis. In some cases the difference between these can be considerable.
- Treatment of future commitments also influences the total wealth and debt of the public sector.
- The public sector's regulatory measures do not necessarily cause any direct budgetary effects but their economic significance can be quite large. The purpose of regulatory norms is to attain some social policy objective of the public sector, but the costs accrued by their execution can be mainly directed to the private sector.

It would be desirable that these elements of the scope of public activity could be measured by uniform grounds. This would, however, require development and standardisation of the present measurement methodology.

The commodities produced by the public sector are collective ones that can be national or regional (club commodities) and private services (e.g. education and health care services). These can be specified operationally. In contrast, measurement of externalities is difficult. Classification of the commodities produced by the public sector as merit commodities would require information about the bases of decision-making.

The key problems for the measurement of the public sector size are due to the differing tax system structures. The main problems are whether the government uses direct expenditures or tax subsidies for attaining its objectives and for public current transfers subject to tax or exempt from tax. For these reasons the total tax rates are not directly comparable between different countries.

Expenditure structures can also differ considerably from one another. For example, the Nordic Countries have virtually free health care and education services, while the majority of these services are produced by the private sector in the United States, for example. In such cases it is often advisable to present both the private and public expenditure components at the same time.

When examining expenditures it should be noted that there are several off-budget expense items that produce monetary obligations to the private or public sector, but that do not cause public cash expenditures and are therefore left outside budgets. These are included in public financial support, for instance.

The pension system also involves future commitments that are not necessarily registered in the budget. Usually they are included only if pensions are consolidated and separate pension security payments are collected on them. These, too, can be below the profit margin, that is, the systems are only partly consolidating. Considering the development of the age structure of the population, the registration method of pension expenditure now has a greater economic significance than before.

The accounting treatment of the commitments created in public and private sector partnership projects can have effects both on the time profile of the public sector and on the amount of public debt. The effects of public sector regulatory measures can primarily be directed to private sector costs and prices, whereby they are not seen as being occasioned by public sector measures.

Although the SNA provides a good foundation for measuring the size of the public sector, there are some purposes that the standardised national economic accounts do not quite satisfy. Our analysis shows that the 'best' indicator of the public sector size cannot be found easily. Different indicators describe different things. Thus it is vital that the user is informed what the differing indicators actually reveal. The public sector is a multi-dimensional and multi-activity entity, for which reason even for describing its size several dimensions and measurement methods are needed to obtain a correct and reliable view of the role of this important sector in the national economy. This also raises the question of whether the accounting system should be developed and combined to a satellite system concerning the size and scope of the public sector. The satellite systems are handled in the SNA and they are recommended for various purposes (SNA, 1993, paras 21.1. – 186).

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Table 1.
Indicators of the size of the public sector in the year 2000

	1 Total tax rate %/GDP	2 Public expenditures %/GDP	3 Public consumption expenditures %/GDP	4 Public investment %/GDP	5 Value added of the general government %/GDP	6 Employment in public sector per population of 1000	7 Gross social expenditures %/GDP	8 Net social expenditures %/GDP
Ireland	31,1	32,6	13,4	3,8	8,6	50	19,6	17,1
Portugal	34,5	44,3	20,3	3,8	16,8	84		
Spain	35,2	39,8	17,4	3,2	11,9	51		
Great Britain	37,4	36,9	18,8	1,2	8,1	84	23,8	21,6
Greece	37,8	48,3	15,4	4,1	12,0	47		
Germany	37,9	48,4	19,0	1,9	9,6	54	29,2	27,0
The Netherlands	41,4	45,4	22,7	3,2	11,9	47		
Luxembourg	41,7	40,3	16,2	4,0	10,8	63		
Italy	42,0	46,9	18,2	2,4	12,5	60	29,4	24,1
Austria	43,7	52,8	19,4	1,7	12,1	71	28,5	23,4
France	45,3	52,9	23,3	3,0	16,1	98		
Belgium	45,6	49,5	21,2	1,8	12,9	69	30,4	26,3
FINLAND	**46,8**	**48,6**	**20,6**	**2,6**	**15,6**	**108**	**33,3**	**24,8**
Denmark	48,8	54,1	25,1	1,7	19,0	152	35,9	26,7
Sweden	54,2	57,7	26,2	2,5	19,0	150	35,7	28,5
EU-15	41,6	46,4	19,9	2,3	13,1	74		

Sources: Col. 1: OECD Revenue Statistics, table A
Col. 2-4: European Commission / Statistical Annex of European Economy / Spring 2002
Col. 5: OECD National Accounts of OECD Countries Volume II (2002), tables 1 & 12
Col. 6: OECD, OLIS-database
Col. 7-8: DAFFE/CFA/WP2 (2001) 11

THE SIZE OF THE GOVERNMENT SECTOR FROM DIFFERENT PERSPECTIVES

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"No government ever voluntarily reduces itself in size. Government programs, once launched, never disappear. Actually, a government bureau is the nearest thing to eternal life we'll ever see on this earth." Ronald Reagan

Abstract

This paper examines macroeconomic concepts and data which are available for the analysis of the size of government in EU Member States. It explains the definition of government under the existing national accounts system, and proceeds to examine the size of government from several perspectives: as a producer, consumer, revenue-raiser, borrower, re-distributor and employer. The conclusion of this analysis is that most indicators for the size of government lead to similar rankings of countries. The paper examines the available data in Eurostat, and presents some further ongoing work in macroeconomic and microeconomic fields.

1. Introduction

As the background paper to this seminar explains, the size of government is a constant source of debate around the world. There are political, social and economic aspects to the discussion of the "optimal size of government". This presents us with a very wide range of possible indicators to explore – macroeconomic (eg. taxation, spending, employment), microeconomic (eg. industry policy, regulation, public companies), and social (eg. healthcare, education, social protection). This paper concentrates heavily on existing data sources from the macroeconomic perspective, with a brief consideration of microeconomic issues at the end.

2. The definition of government

There are many words in common use which are often considered synonymous with "government" – for example the 'public sector', the 'public administration', the 'State', the 'authorities'. However the interpretation often varies across countries and between individuals in any particular country. From the earliest days of economic and financial statistics, it was recognised that a single definition of "government" was required to ensure that macroeconomic statistics are consistent and comparable.

After a lengthy evolutionary period, the current definition of "general government" (which encompasses Central Government, State and Regional Government, Local Government and Social Security funds) was settled in the national accounts in the following way:

"Government units may be described as unique kinds of legal entities established by political processes which have legislative, judicial or executive authority over other institutional units within a given area…the principal functions of government are to assume responsibility for the provision of goods and services to the community or to individual households and to finance their provision out of taxation or other incomes; to redistribute income and wealth by means of transfers; and to engage in non-market production." (SNA93[1] paragraph 4.104)

[1] System of National Accounts 1993, available at http://unstats.un.org/unsd/sna1993/introduction.asp

The definitions of general government adopted in the IMF's GFS manual[2] are identical to those in the SNA93. Given the importance of the delineation of the general government sector in Europe, because of the use of statistics for the Excessive Deficit Procedure and other policymaking requirements, Eurostat has drawn up certain clarifications of the SNA93 rules, contained in the ESA95[3] and in the related Manual on government deficit and debt.

The decision on whether or not to classify a body to the general government is taken in three steps for any organisation (including organisations located in territorial enclaves outside the physical boundaries of the country). To start off the rules there must be a minimum set of units which are clearly part of government – one would for example include all relevant Ministries and local executive bodies whose activities are founded in law and which are headed by elected officials, and one would also include all Parliamentary authorities.

Step 1. Is the body controlled by a government unit (probably a Ministry or the Parliament)?

This step is relatively straightforward, assuming that a set of Executive and Parliamentary authorities can be identified. Control is defined as the ability of a government unit to determine the operations and policies of the body, if necessary. If this is the case then we proceed to step 2.

Step 2. Is the body a separate institutional unit?

ESA95 (paragraph 2.12) specifies that to be a separate institutional unit a body must:

- compile a complete separate set of accounts (or be meaningfully able to if required);
- be entitled to own goods or assets on its own behalf, including the ability to freely exchange ownership with other units;
- be able to take economic decisions and engage in economic activities for which it is itself held directly accountable at law;
- be able to incur liabilities on its own behalf, to take on other obligations or further commitments and to enter into contracts.

If these conditions are not all satisfied, the body should be classified to the general government because it is not separable from the government unit which owns it. The spirit of the rules above is not so different from the rules in business accounting about consolidation of entities. If the body is a separate unit (and this may be the case even if it is not incorporated) then we proceed to step 3.

One can note in passing that de-facto these rules imply judgement on the level of control exercised by the government over any particular unit is owns. A unit which must obtain permission from a Ministry for every detailed decision is clearly indistinguishable from a department of the Ministry. By contrast a body whose managers are allowed to operate freely, within the strategic direction of a board of directors appointed by the Ministry, can be considered a separate institutional unit.

One might also note the potential overlap with the definition of a "statistical unit". Under ESA95 the lowest form of statistical unit is the "Local Kind of Activity Unit" (LKAU) – which can correspond to an institutional unit, or to part of it. In a manufacturing context these might, for example, refer to individual plants owned by the same company. If more than one LKAU is identified in an institutional unit, then they are each subjected to the rules in step 3 below. By convention, if an institutional unit is a market producer then all of its LKAUs must be considered market producers. A non-market institutional unit can have secondary market LKAUs (but all LKAUs are classified to general government).

Step 3. Is the body a non-market producer?

The SNA93 describes a non-market producer as "producers that provide most of their output to others free or at prices which are not economically significant". In Europe the definition of 'economically significant prices' has been quantitatively defined, with respect to the relationship between revenue and costs:

"output is only sold at economically significant prices when more than 50% of the production costs is covered by sales" (ESA95 paragraph 3.19)

[2] Government Finance Statistics 2001 (IMF), available at: http://www.imf.org/external/pubs/ft/gfs/manual/

[3] European System of Accounts 1995 (Eurostat)

"Production costs" are defined as including costs of materials and services purchased, compensation of employees, consumption of fixed capital (depreciation) and other taxes on production. "Sales" are defined to include all payments linked to the value or volume of the output. It is recommended that the decision be made with data from a number of years so that the classification of a body is not changed every year.

In most cases, the classification of bodies according to the rules above is reasonably clear-cut, and statistical authorities find relatively few difficulties. However there are inevitably borderline cases. These cases continue to appear regularly and are dealt with during bilateral discussions between Eurostat and the country concerned, or in a broader context by the relevant European committees[4]. The following five examples show borderline cases which have been examined in Europe over the last few years or continue to be a point of discussion:

Hospitals
Typically government units are major purchasers of health-care services. The question arises whether payments by governments to hospitals can be considered as sales. According to the ESA95 definition, all payments linked to value or volume of output are considered sales. This automatically excludes any transfers from the government which are designed to meet the financial deficits of hospitals. However it was necessary to go into more detail and a simple rule was eventually agreed – the payments are only sales if they are made according to a system of pricing applied to both public and private hospitals. Under this rule just over half the countries in the EU classify their public hospitals to the general government sector, whilst the other half do not.

State Export Credit Agencies
State export credit agencies provide insurance to exporters. Most operate under Government guarantee. In the past, though now much less so following world trade agreements, governments tended to provide a regular financial flow to ensure that export insurance was 'affordable'. National accountants in Europe agreed a simple test for classification of these units – over a period of several years do the premiums and return from financial investments exceed claims paid net of recoveries? If no, the units would be classified to general government. It is important to stress, in passing, that under national accounts rules, the existence of a guarantee is not a determinant of the classification of a unit[5].

Market regulatory agencies
Within the EU, each country has one or more bodies which have responsibility for managing the distribution of EU agricultural subsidies. These bodies often have other duties (known as market regulation activities), such as the buying and selling of agricultural products. If the unit cannot be reasonably split into two separate parts for these activities, the classification rule established is that the unit should be classified to the general government sector if less than 80% of its costs are incurred in market regulation activities. This case is an example of European statisticians being obliged to set a "quantified convention" to decide borderline cases – the 50% rule described earlier is another example, as is the 85% rule applied to securitisation transactions.

Public-Private Partnerships
As governments have tried to improve the value for money in major investments activities and to better manage their debt and deficit levels, they have created new types of contractual arrangements which are used, for instance, to undertake and finance large-scale investments. The best examples are Public Private Partnerships (PPPs). While government is usually the initiator of a PPP and is likely to be the main client for the output delivered by the PPP (infrastructure, public services, etc.), the partner supplying the PPP's main product is a private sector entity in business accounting. There are, however, cases where the partner in the PPP is controlled by government or benefits from extensive guarantees regarding minimum future sales, cost reimbursement or the like. This would mean that the government actually bears the majority of the risks associated with the project. In such instances one could consider a re-classification of the partner's assets and liabilities to the General Government sector. A Eurostat Task Force is currently examining this issue.

[4] The Financial Accounts Working Group, National Accounts Working Group, and Committee on Monetary, Financial and Balance of Payments Statistics (CMFB).

[5] More generally, guarantees not yet called are considered in the national accounts system as "contingent liabilities" and are therefore not recorded at all until they are called. This often creates confusion amongst non-national accountants, who take the view that a guarantee should somehow be seen as the guarantor assuming a debt.

Hybrid Units
There are institutional units which – because of their activity mix – could be classified in more than one sector. This can be the case for certain regional development financing entities which engage both in financial intermediation, by lending for instance, to SMEs, and hold quite large portfolios of equity stakes in enterprises. Depending on the exact composition of their turnover and balance sheets, these entities can therefore be classified to the government sector or under "financial institutions". Alternatively, in similar cases of hybrid activities, a 'virtual split' of the entity by activity can be contemplated. It is worth noting that in breakdowns by industrial branch, it is usual that enterprises are broken down into "kind of activity units".

The definition of the "general government sector" in national accounts has found its way into use in many other areas of official statistics. It is however important to point out the possible confusion between the sector and branches of industry, into which national accounts and business statistics are presented. As explained above, the definition of a general government unit does not precisely focus on the type of economic activity carried out – more important is the extent to which the unit has autonomy and meets its production costs from sales. Within the industry branch classification scheme (NACE[6] in Europe) units classified to the general government sector could appear in almost any industry branch, though in general they are concentrated in NACE L (Public Administration), NACE M (Education), and NACE N (Health). Thus taking the industry branch NACE L "Public Administration", as some analysts tend to do, will typically only capture some 70-80% of units classified to the general government sector.

The definition of "government" is extended by the GFS Manual (see paragraphs2.59 to 2.62) to a concept of the "Public Sector", which is defined to be general government plus "public corporations" and the Central Bank. Public corporations are in effect those units which pass through steps 1 and 2 outlined above, but whose sales cover more than 50% of their production costs. Examples in Europe include railways, TV stations, and electricity companies.

Most European countries choose not to use this "Public Sector" definition either in their budgeting or statistical activities. Whilst data are usually available on the largest public corporations (their accounts are often a primary data source for national accounts), few countries choose to separately classify and measure the activities of smaller public corporations, often owned by regional or local governments. The main exception is the United Kingdom, which has over many years used Public Sector definitions in its public budgeting system. However given the extensive privatisation programme in the UK over the past 20 years, the difference between the general government sector and the public sector is actually quite small in practice. This would not be the case in many other EU countries.

There is one other important general point to make. In national accounts units classified outside the general government sector may nevertheless have certain of their economic transactions included within general government. For example, if a public corporation undertakes payments on behalf of government (eg. unrequited payments such as subsidies or capital transfers), these transactions may be 're-routed' as if they were made by government. Another example is borrowing by a public corporation which the government guarantees and where the guarantee is systematically exercised or where the government takes budgetary responsibility for interest payments – in these cases the borrowing of the public corporation is allocated to general government. This type of re-routing happens relatively rarely, but can cause a discrepancy between some measure proposed below (eg. expenditure, deficit and debt) and others (eg. employment).

3. The size of government from different perspectives

Moving on from definitional questions, it is possible to view the government from several different perspectives – as a producer, as a consumer, as a spender, as a revenue raiser, as a re-distributor, as a borrower, and as an employer. The following sections discuss each of these in turn, and analyse data for EU Member States.

In order to compare the size of government between countries, and within one country over time, it is often necessary to find a scaling factor. In the examples below the scaling factor used is generally Gross Domestic Product at market prices (in one case, total employment). Whilst GDP is the most general useful measure of the size of any economy, it is not the only possible scaling factor. Others are mentioned in the text where appropriate.

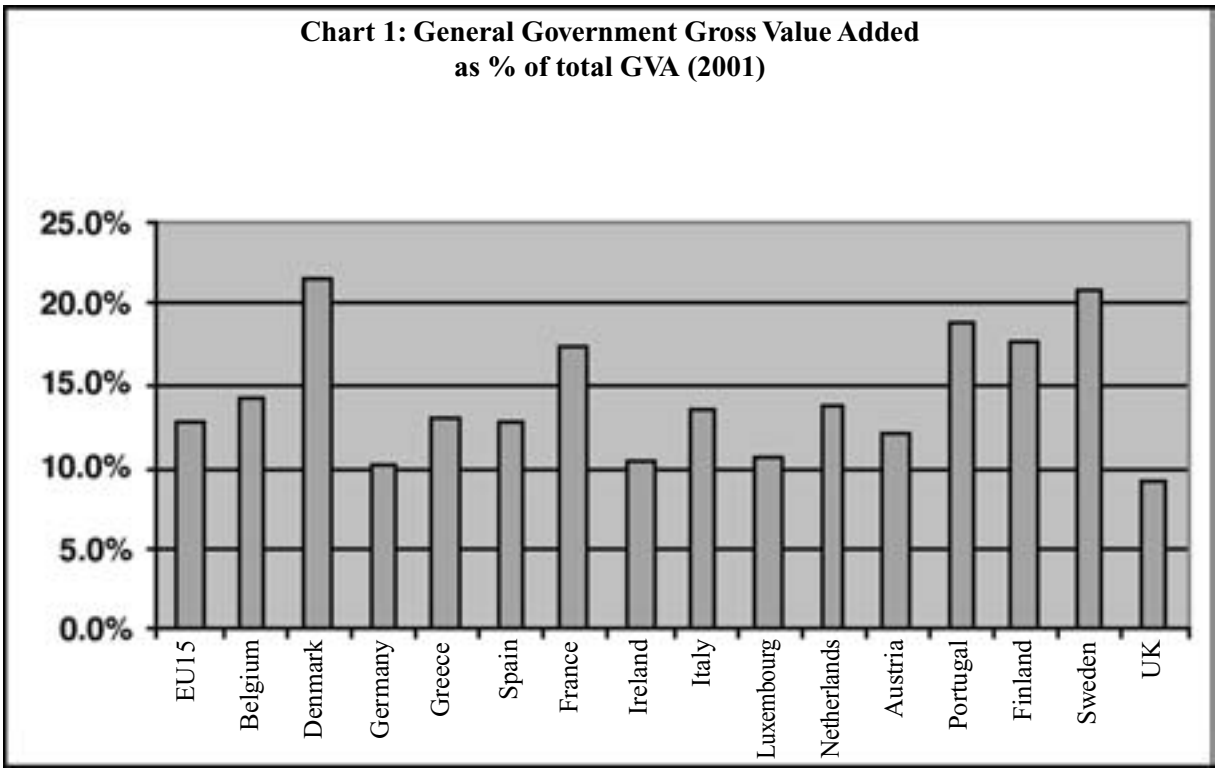
[6] Statistical Classification of economic activities in the European Communities, version 1.1 - available at the following address: http://europa.eu.int/comm/eurostat/ramon/nace_rev1_1/nace_rev1_1_en.html.

3.1 Government as a producer

Given the definitions of general government units set out above, it is not surprising to learn that most government output is of a non-market type, though government may also sell some goods and services at market prices (for example publications). The national accounts have adopted the convention that government output is measured as the sum of production costs (as defined above these include costs of materials and services purchased, compensation of employees, consumption of fixed capital (depreciation) and other taxes on production); government is not assumed to make a profit, defined as zero net operating surplus, though in practice some government units may make profits or losses.

In comparing the size of government sector production across countries, it is preferable to use a measure of value added (that is, output minus costs of materials and services purchased). The following chart shows gross value added for the general government sector, expressed as a proportion of total gross value added in the economy, for EU countries.

Chart 1: General Government Gross Value Added as % of total GVA (2001)

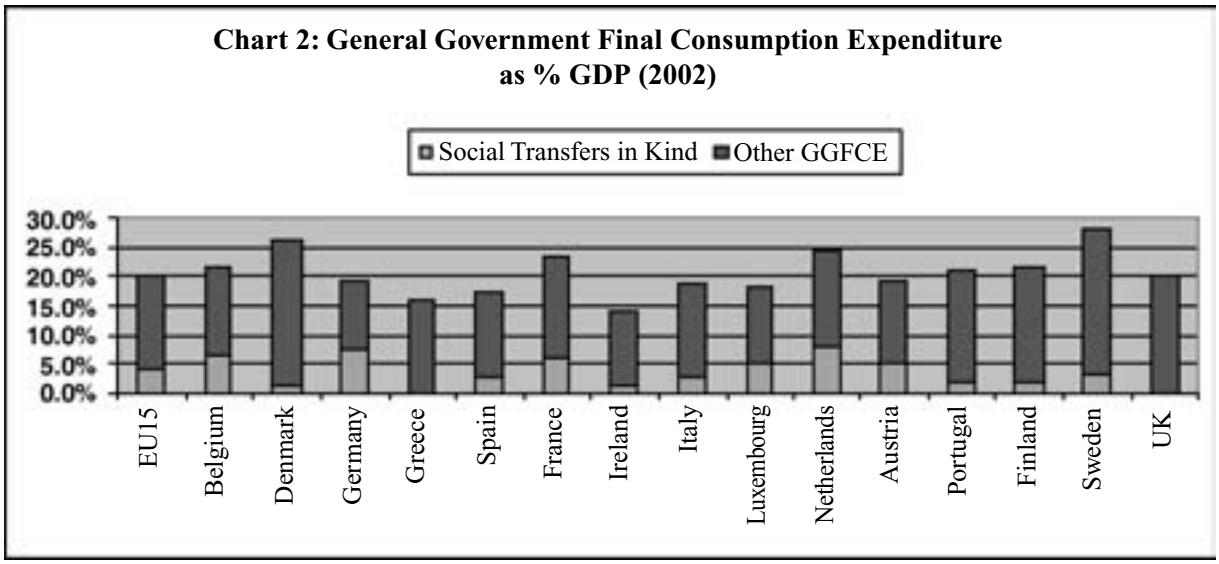


3.2 Government as a consumer

Within the national accounts system, the sensible approach is taken that every product produced in the economy must be accounted for as being used – it is either consumed, put in inventories, invested, or exported. Therefore the output of government (as measured above) must also be allocated to a use. The convention used in national accounts is that government output is divided into two parts:

- Any payments made by non-government units (eg. households) are allocated to their expenditure (eg. Household Final Consumption Expenditure).
- The remaining output is allocated to "Government Final Consumption Expenditure" - it is assumed that government itself consumes any part of its output which is not purchased.

It is important to stress that "Government Final Consumption Expenditure" is not the same as "Government Expenditure" which is covered in section 3.3 below. The following chart illustrates the ratio between government final consumption expenditure and GDP across EU Member States.



Note: The UK and Greece do not distinguish Social Transfers in Kind.

A voluntary option is provided in the SNA93 to allocate the production of "individual services" (eg. health and education) to consumption of households rather than to consumption of government. This leads to an aggregate known as "Actual Final Consumption Expenditure", which for government includes only collective services that cannot be allocated to individual consumers. However few countries actually make this distinction in practice in their accounts.

It is worth noting that a rather special treatment must be made where government makes a purchase of a good or a service so that it is provided free of charge or at reduced price as a social benefit. An example of this is where social claimants can obtain free medicines from a pharmacy shop, and then the government subsequently pays the pharmacy for the medicines. These types of transactions are known as "social transfers in kind" and are deliberately included in both Government purchases and Government Final Consumption Expenditure. They also form a part of the "individual services" which are allocated to households under "Actual Final Consumption Expenditure".

One final issue worth considering (here, but also for some other indicators) is whether consumption and GDP should actually be expressed in Purchasing Power Parities (PPPs)[7] for the purposes of analysis. PPPs convert data in national currencies to an equivalent purchasing power unit (thereby providing an alternative to use of exchange rates); a separate PPP is compiled for each type of consumption, and then a PPP is derived for GDP as a whole. If the PPP for GDP differs from the PPP for government final consumption expenditure significantly across countries, this may change the results of the comparison. In practice the use of PPP-based data does not change the rankings of the countries at all, and has a relatively low impact on the levels. Whilst this may provide an interesting avenue to explore further, the quality of government consumption PPPs is questionable, and this paper does not go further down this road.

3.3 Government as a spender

Governments spend money on a wide range of activities. Many of them are related to the governments' activities as producers (paying staff, buying materials and capital equipment, etc). However there are other expenditures as well, such as the following[8]:

- Social benefits payments, such as pensions (analysed further in section 3.6)
- Interest payments on government debt
- Subsidies and investment grants paid to businesses

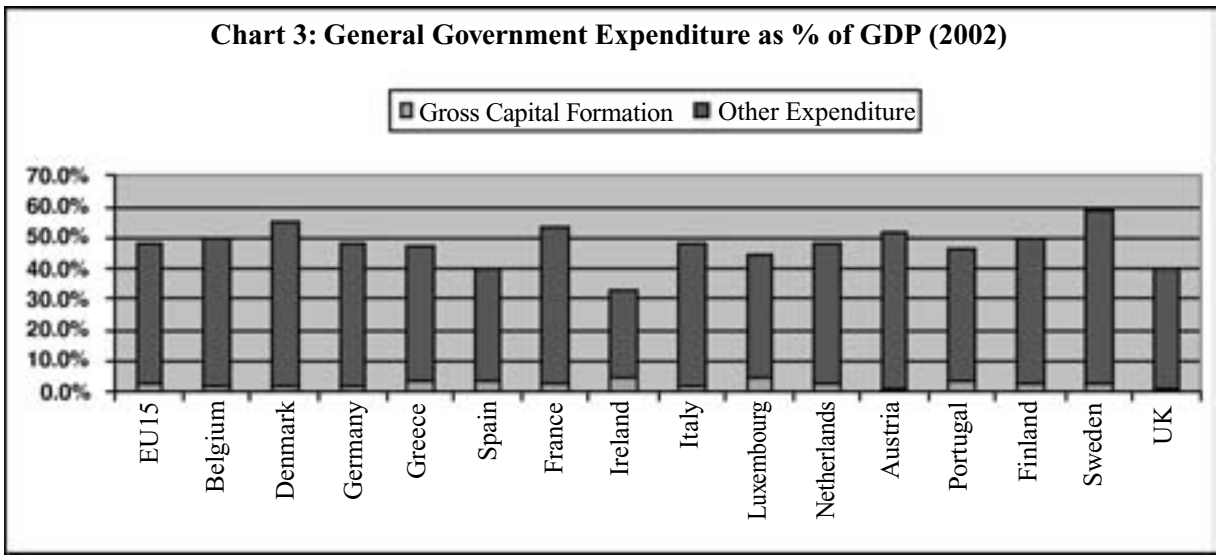
One should note that government expenditure statistics include both current and capital expenditure together. Some analysts prefer to focus on current expenditure, since they consider capital expenditure to be more

[7] For example, see the Eurostat Statistics in Focus "Purchasing power parities…" Theme 2 - 56/2002 available for free from the Eurostat website.

[8] A more technical description of general government expenditure is given in Council Regulation 1500/2000, at http://europa.eu.int/eur-lex/pri/en/oj/dat/2000/l_172/l_17220000712en00030010.pdf

"worthwhile", though capital expenditure typically represents a very small proportion of total government expenditure. The following chart shows total government expenditure as a proportion of GDP for EU Member States, with a division into current and capital expenditure.

Chart 3: General Government Expenditure as % of GDP (2002)



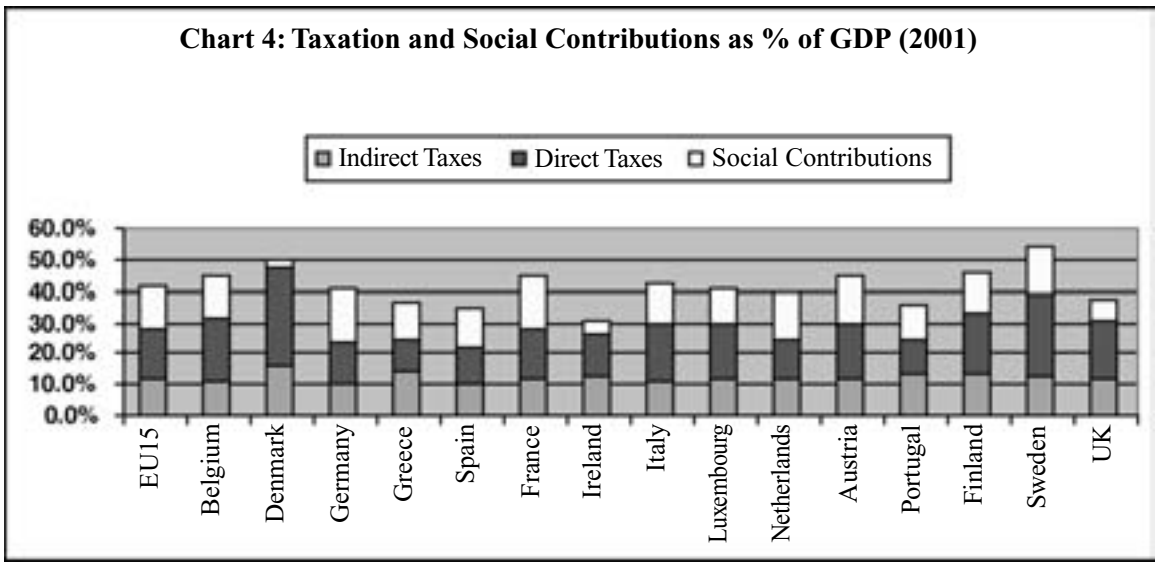
It is worth noting in passing that government expenditure can be classified into its functional purpose (using a classification system known as the "Classification of Functions of Government" or COFOG[9])

3.4 Government as a revenue-raiser

Analysts often focus on measures of the "tax burden" as an implicit measure of the size of government (under the plausible assumption that bigger government requires bigger tax revenues to fund itself). There is a particular focus on the evolution of tax burden measures over time, especially at the time of elections.

The definitions of tax burden have been agreed internationally, based on the SNA93/ESA95, with some further development work by the OECD and Eurostat. The treatment of social security contributions has been particularly scrutinised, as they appear in many forms (including voluntary contributions and imputed contributions for certain employer pension schemes). The data presented below includes a relatively wide definition of social contributions, to include actual social contributions paid by employers and employees on a compulsory and voluntary basis. Further detail on this, and other issues, are available from the European Commission publication on the structure of taxation systems in the EU[10].

Chart 4: Taxation and Social Contributions as % of GDP (2001)



[9] This classification is available at http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=4&Lg=1

[10] Latest version published 2003, ISBN 92-894-5149-1, available for purchase from Eurostat.

It is worth mentioning that many national governments have been taking action to further integrate their taxation and social benefits systems, in particular by introducing and extending the use of tax credits. Statisticians have agreed a methodological treatment of tax credits, though in practice some schemes do continue to be reported by governments as entirely negative taxation:

- Any tax credits up to total tax liability for an individual taxpayer are recorded as negative taxation (ie. they reduce the tax burden).
- Any element of tax credits exceeding total tax liability for an individual taxpayer are recorded as expenditure on social benefits (which would then be captured in the expenditure measure under section 3.3 above.

3.5 Government as a borrower

Allowing for some non-taxation revenues, the difference between expenditure and revenue above should determine the borrowing requirement of the government. Government borrowing and debt were included in the "Maastricht criteria" for entry to the Eurozone, and have since been included in the Stability and Growth Pact. An early decision was made to base the borrowing and debt figures on national accounting standards set within Europe (now ESA95).

The following charts illustrate the very latest available data for EU Member States.

Chart 5: General Government Deficit (-) / surplus (+) as % GDP (2002)

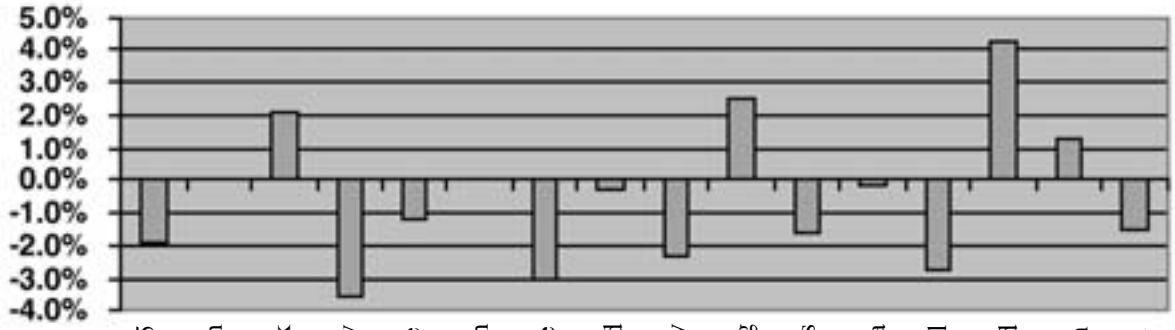
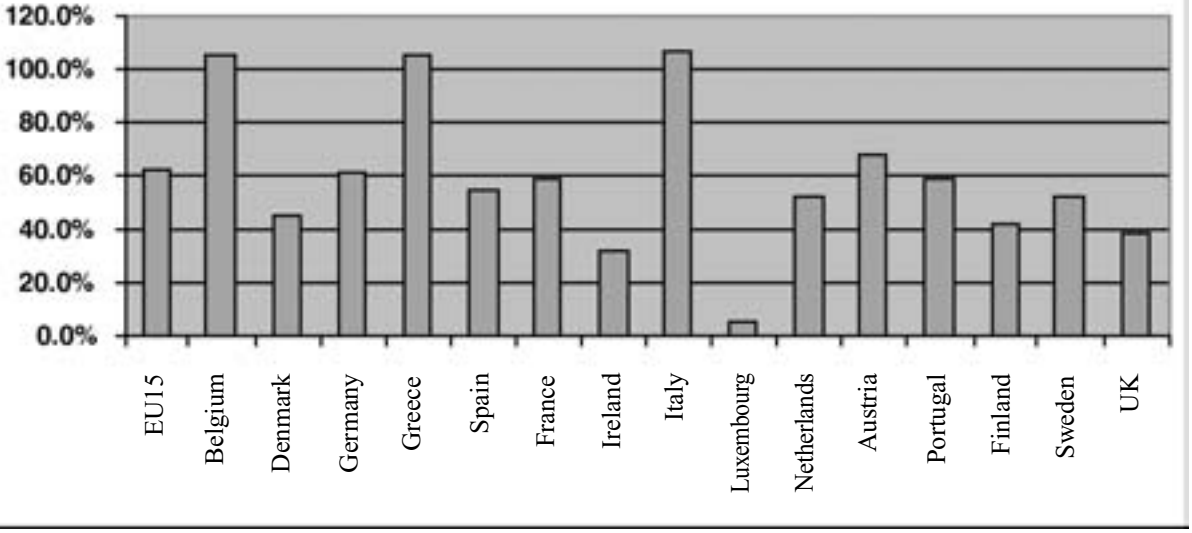


Chart 6: General Government Debt as % GDP (2002)



As explained above, there continues to be a significant statistical methodological development programme in the EDP to ensure that ESA95 principles are interpreted correctly and applied to practical cases arising across Europe. Governments have generally become more financially sophisticated in the past few years - there have been significant privatisation programmes and restructuring of public corporations, securitisation transactions are more common, and a rapid spread of Public-Private Partnerships. This has led to Eurostat making a number of decisions based on the advice of the Committee of Monetary, Financial and Balance of Payments (CMFB), a committee of senior economic statisticians from Member States Statistical Office and Central banks. For example in the last two years there have been decisions on the non-returned banknotes and coins in Eurozone countries, securitisation, capital injections to public corporations, and the transfer of Government real estate. It is likely that there will be further decisions this year on public-private partnerships and government pension schemes.

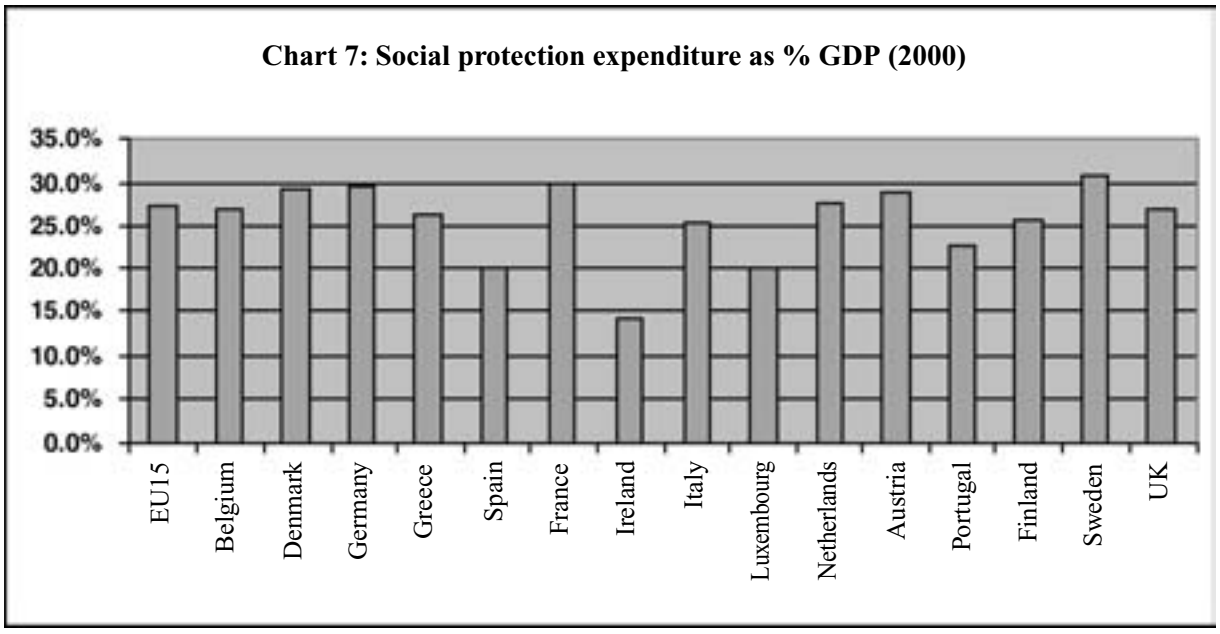
3.6 Government as a re-distributor

The most comprehensive data collection on social protection in Europe is provided by the European System of Integrated Social Protection Statistics (ESSPROS)[11]. This data collection contains detailed breakdowns of social protection expenditure by function and type. Social protection expenditure is defined as "all interventions from public or private bodies intended to relieve households and individuals of the burden of a defined set of risks and needs…".

Clearly some social protection provided by private bodies, such as charities, is included in the figures, as is administrative expenditure. But both are of these are a relatively small proportion (less than 4% on average) of the total.

The following chart shows total social protection benefits expenditure expressed as a proportion of GDP at market prices for the EU Member States.

Chart 7: Social protection expenditure as % GDP (2000)



3.7 Government as an employer

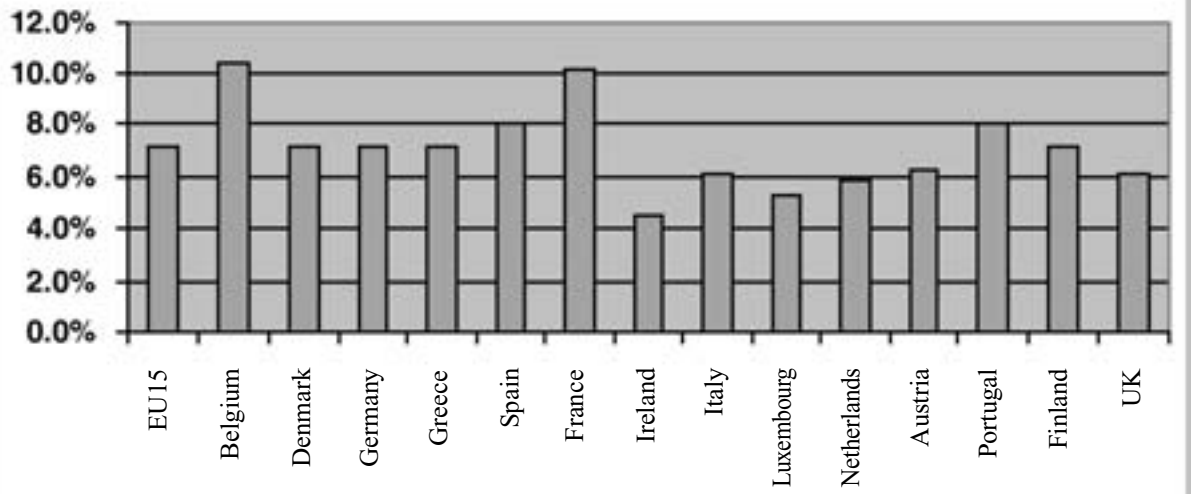
Government is usually a major employer. At present there is no harmonised collection by Eurostat of the total number of public employees in EU Member States. Employment is actually divided in the national accounts only by industry branch. In the absence of other data, one can analyse the proportion of employees in working in NACE L (Public Administration)[12]. There may be public employees working on other industry branches (es-

[11] For more detailed information, see the latest publication "Social Protection – Expenditure and Receipts: 1991-2000" published by Eurostat in February 2003, ISBN 92-894-4894-6.

[12] This includes such activities as defence, judicial services and police, foreign and economic affairs, administration of tax and social systems, regulatory and general public service activities.

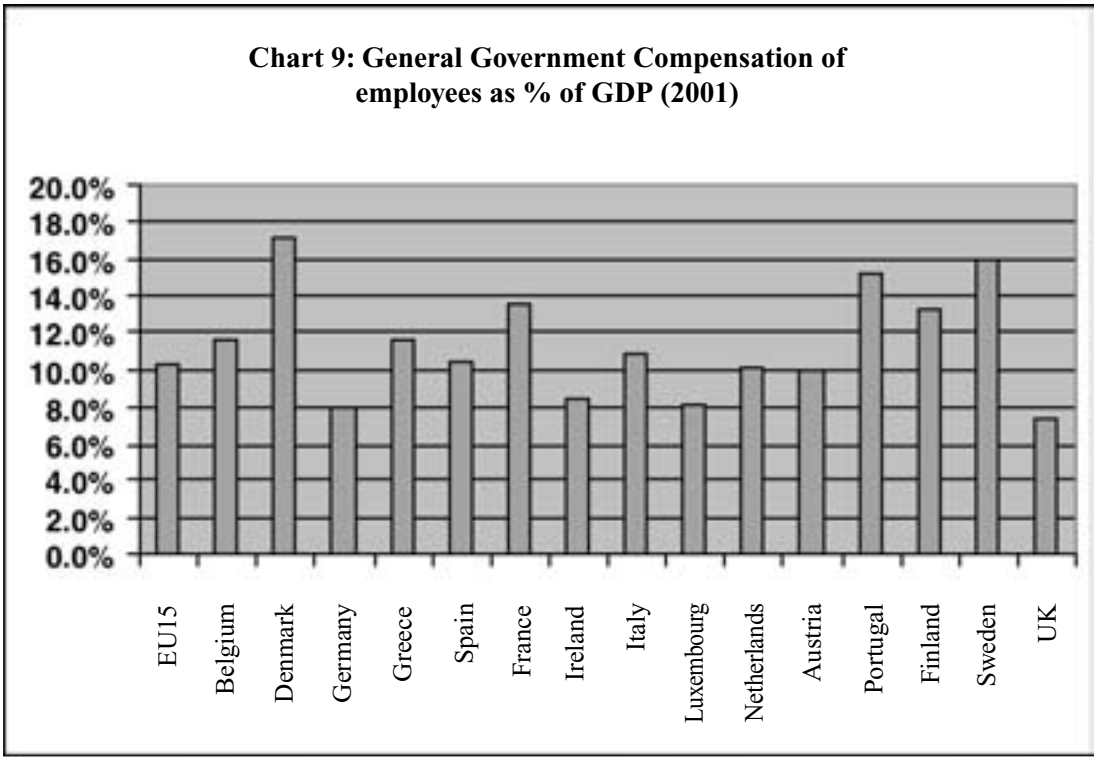
pecially health and education) but these are not separately identified. The following chart shows NACE L employment as a proportion of total employment (Sweden does not compile NACE L employment at present and therefore is excluded from the chart and the EU15 calculation).

Chart 8: Proportion of employment in Public Administration (NACE L) (2000)



Another possible way to show the proportion of employees is to use the total of expenditure on compensation of employees (basically gross wages and salaries plus social contributions) in the general government sector.

Chart 9: General Government Compensation of employees as % of GDP (2001)



It is worth mentioning that the OECD do collect annual public sector employment data through their "PUMA" (Public Management) project.

3.8 Comparison of the different perspectives

The following table shows the ranking of EU Member States according to the different indicators provided above. In general there is a strong correlation between the rankings, except for the government borrowing and indebtedness.

Table 1: Rankings of countries by indicator

Year	2001	2002	2002	2001	2002	2002	2000	2000	2001
	Ind 1	**Ind 2**	**Ind 3**	**Ind 4**	**Ind 5**	**Ind 6**	**Ind 7**	**Ind 8**	**Ind 9**
Belgium	6	6	5	4	11	2	8	1	7
Denmark	1	2	2	2	13	11	4	6	1
Germany	14	10	7	8	1	5	3	7	14
Greece	9	14	10	12	7	3	9	8	6
Spain	10	13	14	14	10	8	14	3	9
France	5	4	3	6	2	6	2	2	4
Ireland	13	15	15	15	8	14	15	14	12
Italy	8	11	8	7	4	1	11	11	8
Luxembourg	12	12	12	9	14	15	13	13	13
Netherlands	7	3	9	10	5	10	6	12	10
Austria	11	9	4	5	9	4	5	9	11
Portugal	3	7	11	13	3	7	12	4	3
Finland	4	5	6	3	15	12	10	5	5
Sweden	2	1	1	1	12	9	1	N/A	2
UK	15	8	13	11	6	13	7	10	15

There are however also some exceptions to the general pattern. Two indicators in particular show some interesting deviations:

- Indicator 8 (NACE L employment as a proportion of total employment). Here Belgium and Spain rank highly, where as in most other indicators these countries tend to be lower. Part of the explanation could be that the range of results in the table is rather narrow for this table, so a small variation in the result can significantly affect the ranking.
- Indicator 7 (Social Protection). Some countries, for example Finland and Belgium, rank lower on this indicator than on others, which could indicate that they devote less government resources to social benefits and rather more to other types of government expenditure.

Some analysts may want to go beyond an examination of the ranking to look at the variance of the different measures (eg. how much smaller is country x than country y on the different measures). For the sake of brevity, this paper does not consider this aspect.

4. Availability of government data from Eurostat

The following list provides some indications of the data available to Eurostat from EU Member States in the areas touched on above. Not all countries yet meet these requirements (some have derogations for a few years). Eurostat is responsible for co-ordinating and collecting statistical data for the EU Member States and candidate countries, and in most cases has an arrangement with other international organisations (eg. OECD, IMF) to ensure that data are shared, to prevent multiple reporting requirements on countries.

National Accounts

- Full set of government sector accounts – available from all countries, data available from 1995 for all countries (9 countries back to 1980 at least). Delay of 3 months for preliminary data and 9 months for firmer data.
- Employment data (headcount and hours worked) by industrial branch – headcount data available from all countries except Sweden from 1995. Hours worked data available only from 4 countries (Denmark, France, Austria and Finland). Delay of 24 months.

Government Finance Statistics

- Annual government financial accounts – available from 12 countries (exceptions: Greece, Luxembourg, Ireland) from 1995. Delay of 9 months.
- Annual government expenditure and revenue data – available from 14 countries (exception Spain) from 1995, from 1990 for selected countries. Delay of 12 months.

European System of Integrated Social Protection statistics (ESSPROS)

- Annual statistics by type and function – available for all countries, data available from 1991. Delay of 18 months.

5. Areas under further development

There are several areas in which further development in statistics related to government is underway in Eurostat and outside.

a) Excessive Deficit Procedure: As mentioned in section 3.5 above, the methodological development work is ongoing, and Eurostat will continue to release decisions to ensure the harmonisation of compilation practices. At the same time Eurostat will continue its rolling programme of visits to Member States, which identify issues to be resolved either bilaterally or through consultation of statistical committees.

b) Government permissions, concessions and licences: The SNA system is currently being reviewed and will probably be revised in 2008. One major area to be clarified is that of the treatment of intangible assets which can be created and sold or allocated by government. The work is already ongoing in the so-called Canberra II group of national accounts experts.

c) Government productivity: This very topical issue is related to the measurement of government output at constant prices, and its relationship with labour inputs. In order to derive government output at constant prices, most countries deflate the inputs into production (for example wages are deflated by salary data); this implicitly assumes no productivity increase. Through legislation[13], Eurostat is requiring all EU Member States (except Denmark which has a derogation until 2012) to adopt output-based methods by 2006 for education and health outputs. This will involve Member States researching and implementing methods to measure the volume of services delivered and the quality of those services.

d) Health and Education data: Eurostat collects data on various aspects of health and education in the Member States, including financial data. Apart from co-ordination of productivity measures, there is also a need to ensure that the national accounts datasets are compatible with these data. This work is being taken forward.

As explained in the introduction, this paper has concentrated on macroeconomic measures of, with the exception of social protection and the initiatives mentioned above on health and education. It is also possible to think of some micro-economic indicators which are being developed. Two can be mentioned here briefly:

Administered Prices: Government may have an impact on certain prices in the economy through taxation/subsidy, regulatory action (eg. price capping of utility prices) and price-setting (eg. where a public corporation is obliged to set its prices at certain levels). Eurostat's Working Group has recently discussed the development of an index of administered prices, which can serve as context for analysis of general price movements in the economy.

Regulatory burden: The OECD has developed a set of indicators for regulatory burden and has established an "International Regulation Database" which covers 14 EU Member States. Measures available include entry barriers, public ownership, price controls and market share of new entrants.

[13] Commission Decision 2002/990/EC

Annex: Data tables for the indicators

These data tables are the underlying data for the charts within the text (the table numbers correspond to the indicator numbers). They have been compiled from data available to Eurostat on 18 September 2003.

Table 1: Gross Value Added (GG) / GVA (Economy)

	1995	1996	1997	1998	1999	2000	2001
EU15	13.8%	13.8%	13.5%	13.2%	13.2%	12.9%	12.9%
Belgium	14.6%	14.6%	14.4%	14.2%	14.2%	14.1%	14.2%
Denmark	22.3%	22.4%	22.2%	22.7%	22.3%	21.5%	21.7%
Germany	11.3%	11.2%	11.0%	10.7%	10.6%	10.3%	10.1%
Greece	12.4%	11.9%	13.0%	13.0%	13.2%	13.2%	13.0%
Spain	13.3%	13.4%	13.0%	12.9%	12.9%	12.8%	12.6%
France	17.6%	18.0%	18.0%	17.7%	17.7%	17.4%	17.4%
Ireland	12.3%	11.7%	11.2%	10.2%	9.9%	9.8%	10.3%
Italy	13.2%	13.5%	13.7%	13.5%	13.6%	13.5%	13.5%
Luxembourg	12.1%	11.6%	11.5%	11.4%	10.5%	10.4%	10.5%
Netherlands	14.6%	14.2%	14.0%	13.8%	13.8%	13.6%	13.7%
Austria	16.0%	15.8%	13.4%	13.2%	13.0%	12.6%	11.9%
Portugal	16.7%	17.0%	17.0%	17.3%	18.0%	18.7%	18.9%
Finland	20.0%	20.4%	19.4%	18.5%	18.3%	17.5%	17.6%
Sweden	21.4%	21.9%	21.5%	21.4%	21.4%	20.5%	20.9%
UK	10.2%	9.8%	9.4%	9.0%	8.9%	8.9%	9.0%

Table 2: GFCE / GDP

	1995	1996	1997	1998	1999	2000	2001	2002
EU15	20.7%	20.7%	20.3%	19.9%	20.0%	20.0%	20.2%	20.6%
Belgium	21.4%	21.7%	21.2%	21.1%	21.2%	21.2%	21.7%	21.4%
Denmark	25.8%	25.9%	25.5%	26.0%	25.8%	25.3%	25.9%	26.3%
Germany	19.8%	19.9%	19.5%	19.2%	19.1%	19.1%	19.0%	19.1%
Greece	15.3%	14.5%	15.1%	15.3%	15.4%	15.7%	15.3%	15.8%
Spain	18.1%	17.9%	17.5%	17.5%	17.4%	17.6%	17.5%	17.6%
France	23.9%	24.2%	24.2%	23.4%	23.3%	23.2%	23.2%	23.9%
Ireland	16.4%	15.8%	14.6%	14.3%	14.3%	13.2%	13.8%	14.0%
Italy	17.9%	18.1%	18.2%	17.9%	18.0%	18.3%	18.8%	18.8%
Luxembourg	18.5%	18.9%	17.9%	16.8%	16.7%	15.7%	16.8%	18.3%
Netherlands	24.0%	23.1%	22.9%	22.7%	22.9%	22.7%	23.4%	24.5%
Austria	20.4%	20.3%	19.7%	19.5%	19.8%	19.2%	19.1%	19.1%
Portugal	18.6%	18.9%	19.0%	18.9%	19.7%	20.5%	20.8%	21.2%
Finland	22.8%	23.2%	22.3%	21.6%	21.6%	20.6%	21.0%	21.7%
Sweden	27.3%	27.9%	27.3%	27.5%	27.5%	26.8%	27.2%	28.0%
UK	19.6%	19.3%	18.4%	18.0%	18.5%	18.7%	19.3%	20.1%

Table 3: GG Expenditure / GDP

	1995	1996	1997	1998	1999	2000	2001	2002
EU15	53.4%	51.0%	49.3%	48.3%	47.7%	46.1%	47.1%	47.4%
Belgium	52.8%	52.9%	51.4%	50.7%	50.1%	49.4%	49.4%	50.3%
Denmark	60.3%	59.8%	58.0%	57.6%	56.3%	54.7%	55.3%	55.5%
Germany	56.1%	50.3%	49.3%	48.8%	48.7%	45.7%	48.3%	48.6%
Greece	51.0%	49.2%	47.8%	47.8%	47.6%	49.8%	47.8%	46.9%
Spain	45.0%	43.7%	41.8%	41.4%	40.2%	39.8%	39.5%	39.8%
France	55.1%	55.4%	54.9%	53.7%	53.4%	52.6%	52.5%	53.5%
Ireland	41.5%	39.6%	36.4%	35.0%	34.6%	32.1%	33.9%	33.3%
Italy	53.4%	53.2%	51.1%	49.9%	48.9%	46.9%	48.5%	47.7%
Luxembourg	45.5%	45.6%	43.3%	42.0%	41.0%	38.4%	39.0%	44.4%
Netherlands	56.4%	49.6%	48.2%	47.2%	46.9%	45.3%	46.6%	47.5%
Austria	57.3%	56.8%	54.1%	54.2%	54.2%	52.3%	51.9%	51.7%
Portugal	45.0%	45.8%	44.8%	44.1%	45.3%	45.2%	46.3%	46.1%
Finland	59.6%	59.7%	56.4%	52.8%	52.1%	49.0%	49.1%	50.0%
Sweden	67.7%	65.3%	63.1%	60.7%	60.3%	57.4%	57.1%	58.5%
UK	44.6%	43.0%	41.1%	39.8%	39.1%	39.3%	40.2%	40.7%

Table 4: GG Taxation / GDP

	1995	1996	1997	1998	1999	2000	2001
EU15	39.8%	40.7%	41.0%	41.0%	41.5%	41.4%	40.8%
Belgium	44.0%	44.4%	44.8%	45.4%	45.1%	45.1%	45.1%
Denmark	48.8%	49.4%	49.4%	49.7%	51.1%	49.1%	49.5%
Germany	40.3%	41.3%	41.3%	41.4%	42.3%	42.3%	40.6%
Greece	31.8%	32.2%	33.6%	35.7%	36.5%	37.8%	36.1%
Spain	32.7%	33.0%	33.5%	33.8%	34.5%	35.0%	34.9%
France	42.8%	44.1%	44.2%	44.1%	44.9%	44.3%	44.0%
Ireland	32.2%	32.5%	31.4%	31.2%	31.3%	31.6%	30.6%
Italy	40.5%	42.1%	44.2%	42.7%	42.8%	42.2%	42.1%
Luxembourg	41.4%	41.7%	40.8%	39.6%	39.6%	40.1%	40.2%
Netherlands	39.4%	39.8%	39.6%	39.4%	40.7%	40.6%	39.2%
Austria	41.5%	42.9%	43.7%	43.7%	43.6%	42.8%	44.9%
Portugal	32.6%	33.7%	33.9%	34.3%	35.3%	35.8%	35.4%
Finland	45.5%	46.8%	46.2%	46.1%	46.4%	47.5%	45.6%
Sweden	48.4%	51.2%	51.3%	53.0%	52.4%	51.9%	53.6%
UK	34.4%	34.2%	34.9%	36.1%	36.2%	36.9%	36.9%

Table 5: GG Deficit / GDP

	1999	2000	2001	2002
EU15	-0.7%	1.0%	-0.9%	-1.9%
Belgium	-0.4%	0.2%	0.6%	0.1%
Denmark	3.3%	2.6%	3.1%	2.1%
Germany	-1.5%	1.3%	-2.8%	-3.5%
Greece	-1.8%	-1.9%	-1.5%	-1.2%
Spain	-1.2%	-0.8%	-0.3%	0.1%
France	-1.8%	-1.4%	-1.5%	-3.1%
Ireland	2.4%	4.4%	0.9%	-0.2%
Italy	-1.7%	-0.6%	-2.6%	-2.3%
Luxembourg	3.5%	6.4%	6.1%	2.5%
Netherlands	0.7%	2.2%	0.0%	-1.6%
Austria	-2.3%	-1.5%	0.3%	-0.2%
Portugal	-2.8%	-2.8%	-4.2%	-2.7%
Finland	2.2%	7.1%	5.2%	4.2%
Sweden	1.5%	3.4%	4.5%	1.3%
UK	1.0%	3.8%	0.7%	-1.5%

Table 6: GG Debt / GDP

	1999	2000	2001	2002
EU15	67.8%	63.9%	63.0%	62.3%
Belgium	114.9%	109.6%	108.5%	105.8%
Denmark	53.0%	47.3%	45.4%	45.5%
Germany	61.2%	60.2%	59.5%	60.8%
Greece	105.2%	106.2%	106.9%	104.7%
Spain	63.1%	60.5%	56.8%	53.8%
France	58.5%	57.2%	56.8%	59.0%
Ireland	48.6%	38.4%	36.1%	32.4%
Italy	114.9%	110.6%	109.5%	106.7%
Luxembourg	5.9%	5.5%	5.5%	5.7%
Netherlands	63.1%	55.9%	52.9%	52.4%
Austria	67.5%	66.8%	67.3%	67.3%
Portugal	54.3%	53.3%	55.5%	58.1%
Finland	47.0%	44.6%	44.0%	42.7%
Sweden	62.7%	52.8%	54.4%	52.7%
UK	45.1%	42.1%	38.9%	38.5%

Table 7: ESSPROS Exp / GDP

	1995	1996	1997	1998	1999	2000
EU15	28.2%	28.4%	28.0%	27.6%	27.4%	27.2%
Belgium	28.1%	28.6%	27.9%	27.7%	27.4%	26.8%
Denmark	32.2%	31.4%	30.4%	30.2%	30.0%	29.2%
Germany	28.9%	29.9%	29.5%	29.3%	29.6%	29.5%
Greece	22.3%	22.9%	23.3%	24.2%	25.5%	26.4%
Spain	22.1%	21.9%	21.2%	20.6%	20.2%	20.1%
France	30.7%	31.0%	30.8%	30.5%	30.2%	29.7%
Ireland	18.9%	17.8%	16.3%	15.4%	14.7%	14.1%
Italy	24.8%	24.8%	25.5%	25.0%	25.3%	25.2%
Luxembourg	23.7%	24.1%	22.8%	21.7%	21.2%	20.1%
Netherlands	30.9%	30.1%	29.4%	28.4%	28.0%	27.4%
Austria	29.1%	29.1%	28.9%	28.5%	29.0%	28.8%
Portugal	22.1%	21.2%	21.4%	22.1%	22.6%	22.6%
Finland	31.7%	31.6%	29.2%	27.2%	26.8%	25.4%
Sweden	34.3%	33.5%	32.6%	32.2%	31.8%	30.9%
UK	28.2%	28.1%	27.5%	26.9%	26.5%	26.8%

Table 8: Employment NACE L / Total employment

	1995	1996	1997	1998	1999	2000
EU15	7.7%	7.7%	7.5%	7.4%	7.3%	7.2%
Belgium	10.2%	10.2%	10.3%	10.3%	10.3%	10.4%
Denmark	8.3%	7.9%	7.4%	7.6%	7.4%	7.1%
Germany	7.9%	7.9%	7.7%	7.5%	7.4%	7.1%
Greece	7.1%	7.3%	7.2%	6.9%	6.9%	7.1%
Spain	8.7%	8.7%	8.6%	8.4%	8.2%	8.1%
France	10.7%	10.8%	10.7%	10.5%	10.4%	10.2%
Ireland	5.6%	5.5%	5.1%	4.7%	4.7%	4.6%
Italy	6.5%	6.4%	6.3%	6.2%	6.2%	6.0%
Luxembourg	5.6%	5.5%	5.8%	5.5%	5.2%	5.3%
Netherlands	6.6%	6.3%	6.1%	6.0%	5.9%	5.9%
Austria	6.1%	6.2%	6.2%	6.4%	6.3%	6.2%
Portugal	7.6%	8.1%	7.8%	7.9%	8.0%	8.0%
Finland	7.6%	7.5%	7.5%	7.3%	7.2%	7.2%
Sweden	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
UK	6.9%	6.7%	6.4%	6.4%	6.2%	6.2%

Table 9: GG CoE / GDP

	1995	1996	1997	1998	1999	2000	2001	2002
EU15	11.1%	11.0%	10.8%	10.4%	10.4%	10.2%	10.2%	10.4%
Belgium	11.9%	11.9%	11.7%	11.6%	11.6%	11.4%	11.6%	12.0%
Denmark	17.3%	17.3%	17.1%	17.5%	17.4%	16.9%	17.2%	17.6%
Germany	9.0%	8.9%	8.7%	8.5%	8.4%	8.2%	8.0%	8.0%
Greece	11.3%	10.7%	11.6%	11.6%	11.7%	11.7%	11.6%	11.9%
Spain	11.3%	11.3%	10.9%	10.7%	10.6%	10.5%	10.4%	10.3%
France	13.7%	13.9%	13.8%	13.7%	13.7%	13.5%	13.5%	13.7%
Ireland	10.2%	9.7%	9.0%	8.5%	8.1%	8.0%	8.4%	8.3%
Italy	11.2%	11.5%	11.6%	10.7%	10.6%	10.6%	10.7%	10.7%
Luxembourg	9.7%	9.7%	9.2%	8.8%	8.2%	7.8%	8.1%	8.7%
Netherlands	10.8%	10.4%	10.2%	10.1%	10.2%	10.0%	10.1%	10.5%
Austria	12.6%	12.4%	11.5%	11.3%	11.3%	11.0%	9.9%	9.8%
Portugal	13.6%	13.7%	13.8%	14.0%	14.4%	15.0%	15.2%	15.4%
Finland	15.2%	15.5%	14.6%	13.8%	13.8%	13.2%	13.3%	13.5%
Sweden	16.7%	17.2%	16.8%	16.2%	15.8%	15.7%	16.0%	16.3%
UK	8.3%	7.9%	7.5%	7.2%	7.2%	7.2%	7.4%	7.6%

MEASURING THE SIZE OF THE GENERAL GOVERNMENT

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Abstract

In 1990, the Federal Government made a decision that the Czechoslovak Statistical Service should start compiling national accounts. The Federal Statistical Office decided, in compliance with the association agreement made with European Union, that European System of National Accounts should be implemented.

The National Accounts Department of the Czech Statistical Office was entrusted in 1993 with the complete compilation of National Accounts as a whole, i.e. quarterly, annually, regionally, non-financial and financial accounts (incl. balance sheets, revaluation and other volume changes in assets accounts) for all sectors and subsectors of economy. It is also responsible for their harmony with the ESA95 methodology, for the quality of the accounts and for the published data.

The very first set of national accounts was produced for 1992. It generally corresponded to the ESA78 methodology. The national accounts for 1993 and 1994 were influenced by the decision to adopt the revised System of National Accounts. The national accounts for 1992 have been revised.

The set of accounts for 1992 and 1993 comprised non-financial accounts and financial accounts broken down by sectors. Since 1994, accounts for institutional sectors are compiled as full sequence of accounts, except revaluation account, which should be split into neutral holding gains/losses account and real holding gains/losses account.

Classifications of accounts, institutional sectors/sub-sectors, items, transactions, are compliance with the ESA95 methodology or they are gradually improving.

The set of non-financial and financial accounts, incl. Balance sheet etc. are compiled at the same time and the compiler is responsible for all accounts for group units, completely a sub-sector or a sector.

The Czech National Accounts are published in two versions - as semi-definitive and definitive. We have started to compile and to send to the Eurostat and to the Czech Ministry of Finance a preliminary version for general government in term t+8 month. It includes only information on non-financial items of the national accounts.

As to quarterly non-financial and financial government accounts we are at beginning – we have just started.

1. Government delimitation

1.1 Classification of institutional sectors and institutional units in the CZ National Accounts

Classification of institutional units in institutional sectors is published in the Business Register, which was established and administered by the Czech Statistical Office under a special Act (the State Statistical Service Act). It keeps records of businesses – i.e. legal persons and natural persons that enjoy the status of entrepreneur. The Register includes e.g. business companies, cooperatives, associations of legal and natural persons or budgetary organizations and semi-budgetary organizations, political parties etc. These units have a licence to do business or carry out other profit or non-profit activities governed by special regulations.

The Register is updated every month according to company registers, trades licensing offices, from the register of social and health insurance payers and also registers, kept by different offices or from statistical sources.

The register of budgetary and semi-budgetary organizations kept by the Ministry of Finance of the CR (MOF) was harmonized with the CSO's business register (BR).

The information on an institutional unit includes "Company Identification Number " (which is assigned by the CSO), business name, legal status, address, number of employees, classification into NACE and into institutional sectors / sub-sectors.

Classification of institutional unit into an institutional sector and a sub-sector is carried out in cooperation with the Register Department of the CSO and the National Accounts Department.

Very important is cooperation between the Register Department of the CSO and the MOF as to updating of budgetary and semi-budgetary organizations, their NACE classification or institutional sector classification and the National Accounts Department, too.

For instance we discussed borderline cases of classification about 200 semi-budgetary organizations, whose results according to the test based on 50% criterion, oscillated in the years 1993 to 1995 years.

The final decision concerning market/non market producers or NACE classification is based on information obtained from individual statistical questionnaires.

The fundamental statistical unit in the government sector is also the institutional unit, i.e. independent legal entities linked to the state budget directly (budgetary organizations) or indirectly (semi-budgetary organizations) or entities fulfilling specific function defined according to a special law (state extra-budgetary funds and other extra-budgetary funds).

1.2 Market/non market distinction

a) A *market producer, in* the National Accounts of the Czech Republic, is an enterprise, company (joint-stock, limited), cooperative, institution, bank, insurance company, etc - including unincorporated enterprises owned by households. These units are
   - established like entrepreneurs - as market producers by laws (e.g. Commercial Code, Acts on banks, Act on Insurance System etc.)
   - their principal activity is the production of goods and non-financial or financial services
   - are registered in the Business Register;
   - are independent legal entities;
   - keep complete set of accounts and they have autonomy of decision
   - their output is sold on the market at prices that are economically significant, and when more than 50% of the production costs is covered by sales.

These institutional units are classified in the corporation sectors, i.e. sector S.11 and S.12 and their sub-sectors.

b) *Public market producers*. All *public units* classified in corporation sectors are treated in the National Accounts of the Czech Republic, as market producers and *as corporations*. Institutional units owned directly by government units (when the government is sole owner) are treated as corporations, too. They are especially state enterprises or semi-budgetary organizations established by a special legislation (acts). They have independent legal status, autonomy of decision, and economic and financial behavior like corporations and keep complete set of accounts.

"The right to appoint officers managing" is applied only for state enterprises and semi-budgetary organizations and it is essentially formal. Each such unit records profit or loss (in its financial statement); production costs are covered by sales goods or services and the government unit (as owner) receives no property income (D.422)

c) *Public market producers and non-profit institutions.* Non-profit institutions are classified in principle in all sectors. Non-profit institutions classified in public corporation sectors are treated as market producers; they are engaged in production of goods or services. The Czech Television and the Czech Radio (as non-profit institutions) belong to the public non-financial sub-sector. Public financial sub-sectors do not include non-profit institutions.

Public institutional units and government sector in the National Accounts:
Some examples:

- Energy enterprises classified in S.1101 - e.g. The Czech energy enterprise, the Czech gasworks (join-stock companies)
- Public transport organizations classified in S.11001, e.g. The Czech Railways or the Prague transport enterprise (join-stock companies)
- The Czech Post, the Czech News Agency, the Czech Television, the Czech Radio (public enterprises) are classified in S.11001
- Water stations, energy suppliers, heating, and waste – are join-stock companies or semi-budgetary organizations classified in S.11001
- Infrastructure roads (semi-budgetary organizations) are classified in S.1311, S.1313
- Public hospitals, schools, social or cultural organizations (central or local units) are budgetary or semi-budgetary organizations. The greater parts of hospitals, which are semi-budgetary organizations, are classified in S.11001 as market producers. On the contrary, the greater number of schools or social units is classified in S.13 as non-market producers.

d) *Non-market producers and government sector*

The government sector includes only units, which are independent legal persons and institutional units. They are treated as non-market units, i.e. when

- output is intended for individual and collective consumption
- provide non-market goods and services
- more than 50% of the production costs is covered by public budgets
- units are principally engaged in the redistribution of national income and wealth
- units are mainly financed by compulsory payments made by units belonging to other sectors

Basic groups of government units are:
- budgetary organizations, classified in the central and local government

(Central budgetary organizations have new name = departments of government and local budgetary organizations = administrative regions)

- semi-budgetary organizations classified in the central and local government
- state and other extra-budgetary funds and the other similar units
- public universities
- health insurance companies

1.3 Units classified in the government sector and some borderline cases

Budgetary organizations:

- Are classified in the central government sub-sector - for instance ministries and central offices (37), the Parliament, the Senate, Science Academy or State Material Reserves etc. (575 central units),
- And in the local government sub-sector - for districts, town offices and local offices (6318 units) and voluntary association of local offices (720 units) = 7038 units

All these units are assumed to be non-market producers. They are fully linked to state or local budgets.

The classification of the State Material Reserves could be discussed. The unit is exclusive engaged in buying, holding and selling of goods – food products, medicaments, raw materials, and machinery etc.- strategic reserves. But the unit is still funded predominantly from the state budget. The goods are sold at economically insignificant prices.

Extra-budgetary funds:

a) State funds established by the special laws (7):

State Fund for the Environment (established 1991)
State Cultural Fund (established 1992)
State Fund for Promotion and Development of the Czech Cinema Industry (Cinematography Fund) (established 1992)
State Soil Reclamation Fund (established 1992)
State Fund for Transport Infrastructure (established 2000)
State Fund for Dwelling (established 2000)
State Agricultural Intervention Fund (established 2001)

State Market Control-regulation in Agricultural Fund
State Market Control-regulation in Agricultural Fund was classified in S.11 – as non-financial public unit (S.11001) since 1992 to 2000 in compliance with ESA95 (but it was budgetary organization). It purchased or sold agricultural products (especially wheat) and distributed subsidies granted by the state budget (on export, for instance milk products). But subsidies were recorded only between the central government and non-financial sector (or households sector).

This fund was financed especially by sales of agricultural products and by bank loans.

Starting 2000 year, this State fund was abolished and was established as the new fund - *"State agricultural intervention fund"* (by the law No 256/2000). The Fund took over all activities from former fund and some activities from the Ministry of Agricultural. At present, its activities are broader: the Fund purchases and sales agricultural products and foodstuffs, however, provides more subsidies (for instance supports of market, storage or programs concerning agricultural products and foodstuffs consumptions) - regulates agricultural products and foodstuffs markets.

Since 2001 is the Fund classified in the central government sector.

b) *Other extra-budgetary funds* (3):

National Property Fund (1991)
Land Fund (1991)
Children and Young People Fund (since 1996 to 2000); the Fund managed real estate of the previous Association of Young People. This Fund was abolished in 2000
Agricultural and Forestry Support Guarantee Fund (1994)
Vine-culture Fund (2002)

Agricultural and Forestry Support Guarantee Fund. The Ministry of Agriculture established this Fund as a join-stock company. However the Fund is principally engaged in distributing subsidies for agricultural and to forestry and on supporting credits by subsidizing interest and by giving credit guarantees to assist in the privatization and restructuring of agriculture. Therefore the Fund was classified in the central government sub-sector.

The Vineculture Fund: The Fund was established by the special Act in 2002 as an independent, legal person, as state institution. By the law, the Fund collets compulsory money "delivery" and provides "assistances" as transfer or as loans.

The delivery is imposed on production of 1 litre a new kind of wine and on every 1 of the vineyard. We treat and record them, in the national accounts, as taxes (D.214). The assistances are provided for new planted or regenerated of vineyards and on assistances on production and propagation sales of wine; the assistances are treated as subsidies (D.319).

In the National Accounts, the Fund is classified in the central government sub-sector S.1311.

However, the Ministry of Finance does not include these deliveries into taxes revenue and assistances into subsidies either.

The other central government units:

The Czech Consolidation Agency

Starting 1991 and after splitting the Federal Republic there was established extra-budgetary financial system including so called transformation institutions, i.e. Consolidation Bank and its subsidiaries (Czech Financial Institution, Czech Revitalization Agency, Sanakon, Konpo, Prisko) and Czech Collection Company, which take over bad claims from banks, from private non-financial corporations, as well as public - law and state-owned profitable and unprofitable entities. They are principally engaged in financial intermediation and their task is to take over or purchase and sale claims. Consolidation Bank curried out same activities as a universal bank (for instance, it received deposits or provided loans to great corporations to support their export). Therefore, these transformation institutions have been classified in the financial corporation sector.

Financial sources of these institutions result from their activities, from received loans and from sources of state budget and the National Property Fund.

The Consolidation Bank was the most important of these institutions. Starting 1996 this Bank indicates permanent losses, which are granted by the government. Amounts of losses were recorded in the central government accounts as other capital transfer from central government sector (D.99 minus) to the Bank (D.99 plus) and as increasing payable of central government (AF.79) because the government did not grant the total amount. This capital transfer affected government deficit. The Ministry of Finance used the same approach in notification tables.

The Consolidation Bank was abolished 31.8.2001 and 1.9.2001 was established the Czech Consolidation Agency (by the law No 239/2001). The Czech Revitalization Agency was abolished, too and it was integrated with the Consolidation Agency. This new institutional unit (legal person) took over all assets and liabilities from former Bank and it is principally engaged in purchases and sales of claims and other financial assets and revitalization of important corporations; it will manage state property. The Agency's activities will be financed from its own receipts and through issuing securities other than shares, from facilities of the central government – from issued state bonds (i.e. state financial assets) and from sources of the National Property Fund. The Agency will not receive deposits.
The central government grants (by the law) all losses of the Agency.

Therefore the Czech Consolidation Agency has been classified in the central government sub-sector (S.1311); it means, that the government debt has been increased.

Other transformation institutions – Agency's subsidiary (Czech financial institution, Konpo, Prisko and Czech Collection Institution) stay classified in S.123. They are established as legal units, as limited companies. They can be treated as borderline case. Some experts of the Ministry of Finance say that these units should be classified in the central government, too.

The Czech Railway Infrastructure Administration

In 2002, the Czech Railways, a state enterprise, was split (by the special Acts) into two institutional units, which are independent legal persons.

The Czech Railways was established as join stock company owned by the government. The company is engaged in providing of public transport services. The unit is classified in public non-financial sub-sector (S.11001).

The Czech Administration of Railway Transport Road, established as state institution, is engaged in managing of state property, i.e. Railway transport roads, rents transport roads and purchases transport services from the Czech Railways. Planned production costs are covered for more than 50% granted by the state budget and the government guarantees all its liabilities.

The Czech Administration of Railway Transport Road is classified in the central government sub-sector (S.1311).

Public Universities –

Public universities had status of semi-budgetary organizations, predominantly financed by the state budget to till 1997. By the Act No 30/1997 these units are legal persons, institutional units, recognized as public non-profit institutions. They are still predominantly financed by the state budget (about 80% of their production costs is granted by the state budget).

Private universities were established by the Act as limited companies and are classified in non-financial corporation sector (37 units) or as non-profit units classified in S.15 (2 units).

Semi-budgetary organizations:

Semi-budgetary organizations are assumed to be market or non-market units engaged principally in production of goods and services. They are independent, legal persons, which are non-directly linked to the state budget or the local government budget through the balance between their revenue and expenditure.

The Ministry of Finance has split these organizations among institutional sectors. The test based on "50% criterion" run on real figures for 1993-1995, aggregated into three-digit industries of NACE; it was based on individual data from financial statements of these units. The NA Department obtains only aggregated data.

- Semi-budgetary organizations included in the general government accounts are those organizations, whose more than 50% production costs are covered by the public budget. In the central government 717 units are classified and in the local government 7359 units.
- Other semi-budgetary organizations were assumed as market and classified mainly in public non-financial sub-sector (S.11001 – 818 units). One unit - the Center of Securities – is classified in the public financial auxiliaries sub-sector (S.12401).

At the present time, the Ministry of Finance is making a new test by 50% criterion on real figures for 2001 – 2003. Some semi-budgetary organizations have been changed into budgetary organization and vice versa.

The Ministry of Finance has changed government unit system. For instance many subsidized organizations have been classified as local government units (managed by the municipality or the district, not a ministry) or they have transformed into enterprises or into budgetary organizations.

The new classification of semi-budgetary organizations will be used for the National Accounts 2004.

Health insurance companies

Health insurance companies (9 units) are classified in the social security funds sub-sector (S.1314).

They are independent, legal persons, established by the several laws (in 1991 and 1992). Special supervisory departments of the Ministry of health and the Ministry of Finance curry out control and budgets of these health insurance companies are endorsed by the Parliament.

They administer compulsory (by the law) and voluntary health insurance contributions and purchase health services on behalf of insured persons - health services (care). These health services provide private medicine doctors, hospitals and other health facilities or medicaments, glasses, etc. (by the law and other decrees). These expenses are included into social benefits in kind (D.63).

- The Compulsory contributions paid by employers, employees and self-employed persons; rates for health insurance premiums are calculated according to the law.

The government pays contributions from the State Budget on behalf of non-employed persons. The health insurance company obtains certain financial amount from this fund according to the number of the registered children, students and old persons.

- Supplementary health insurance is based on voluntary basis (for foreign business or tourist trips or for women who are non-employed, who stay at home etc.);

Supplementary health insurance is according to national legislations treated as "commercial". The General Health Insurance Company has a license for it and can collected contributions to invest in financial assets, which are held as technical reserves. This amount is less than 1 % of the completely collected health insurance contributions.

Eventualities or circumstances against which the participants are insured correspond to the same risks or needs as for compulsory health insurance. Conditions for providing of benefits (health services) are the same, too.

ESA95 "The voluntary contributions referred to here cover: a) social contributions which persons who are not, who are no longer, legally obliged to contribute pay or continue to pay to a social security fund; ……"

These technical reserves are classified in B.90 in the Czech National Accounts– in net worth, not in AF.6. It means; the technical reserves we do not treated as liabilities of health insurance companies and as assets of households.

No service charge is calculated for compulsory and for voluntary health insurance in the national accounts for social security funds.

2. Sources of information

Compiling of the annual national accounts for the government sector is based on information from administrative sources, provided by government units, especially by the Ministry of Finance and from statistical surveys organized by the CSO.

An institutional unit provides data on non-financial and financial activities via statistical questionnaires or financial statements, which are basic or supplementary sources. It is an advantage, because each set of the subsector national accounts - information on non-financial and financial transactions (including balance sheets etc.) - is based on information from the same number and set of institutional units.

The Statistical Business Register (BR) is basis for defining the population and sample of statistical units to be involved in statistical surveys. It is used as the sampling frame. Grossed up data for non-response units are added to the whole population automatically ad they are used as a whole when the national accounts are compiled.

2.1 Information sources used for the annual national accounts for the general government are following:

Financial statements,
Final State Budget
Annual final reports of extra-budgetary funds and other units
Statistical questionnaires
Other information

Financial statements: i.e. revenue and expenditure statement, profit and loss statement and balance sheet.

The Ministry of Finance provides aggregated data from financial statements for all budgetary and semi-budgetary organizations, split by the sub-sectors and by the NACE. As to state extra-budgetary funds the MOF provides individual data and aggregated date, too.

Information on revenue and expenditure for basic activities of budgetary organizations and state extra-budgetary funds is on cash basis. Data on their secondary activities are included in the profit and loss statement, which are on accrual basis. The secondary activities do not constitute separate institutional units; they are only recorded separately in its accounting system.

Data for semi-budgetary organizations are provided from profit and loss statements (for their primary and secondary activities), which are on accrual basis.

Other extra-budgetary funds (NPF, LF etc.) also provide the financial statements (profit and loss statements and balance sheets), annual reports and additional information. The data are on accrual basis.

Before 1999, the MOF provided aggregate data on the activities of universities. These were abolished as semi-budgetary organizations and are primarily non-profit institutions in term of legislation. From 1999 on, aggregated information is provided by the Ministry of Education, Youth and Sports.

State final budget is annual final report compiled by the Ministry of Finance. It includes summary information and description of some government transactions. The State financial assets and liabilities and General Reserve Chapter are its special parts, which are very important sources.

The other information used for compiling of the government national accounts are provided by the MOF, the Ministry of Labour and Social Affairs, the Ministry of Health and by the Czech National Bank etc.:

- time adjusted taxes
- monthly data on social contributions, basis for time adjusted data
- monthly data on social health contributions, basis for time adjusted data
- data on social benefits,
- data on interest from state Treasury Bills and state bonds

The Czech National Bank provides data on deposits, loans, interest on deposits and on loans and data from the Balance of payments.

Statistical questionnaires

The questionnaire is collected for all government units classified in the general government. The budgetary organizations, semi-budgetary organization and extra-budgetary funds fill the statistical questionnaire, which has two versions: for large units (VI 1-01,b) and for small units (VI 1-01, a). Sample survey is used for semi-budgetary organizations.

All the universities fill the statistical questionnaire for non-profit institutions (NI 1 –01). Health insurance companies fill statistical questionnaire, too (ZDP 1-01).

The statistical questionnaire is very important supplement information source, because the

financial statements as a sole information source are not satisfactory. The items of the questionnaire, therefore comply with methodology ESA95.

Annual statistical questionnaires include selected indicators broken down in greater detail. It allows recording of methodological corrections for instance as to rents on land or financial leasing.

Some items from profits and losses information help to account another change in volume assets (K.10), for instance a bad debt (of a liquidated enterprise) write-off. That amount is included in costs of a creditor's institutional unit – in its bookkeeping. Some data are used for estimate of some revaluation items (K.11) with regards to securities, shares or payables. This information is supplementary information to information contend in the other part of questionnaire.

Each annual statistical questionnaire (basic source) includes several parts:

- information on revenue, expenditure and non-financial assets formation, which are used for compilation non-financial accounts compilation. Information permits to calculate output, intermediate consumption, fixed capital consumption (except for budgetary organizations), primary and secondary income compensation of employees or interest, dividends, gross fixed capital formation, etc.
- Information on non-financial assets as at 1 January and 31 December, information on transactions, revaluation and other changes in volume of the assets (fixed assets, inventories, valuables, non-productive assets).
- Information on financial assets is the other special part of the statistical questionnaire. That contains information on assets as at 1 January and 31 December, information on financial transactions, revaluation and other changes in volume of assets. They are surveyed: currency, deposits (total and short-term), securities other than shares (total and short-term), loans (total and short-term), shares and other equity (shares, other equity and shares in mutual funds) and other receivables (total and trade credits and advances).
- The last part is concerning of liabilities: it includes data on own funds, deposits, and securities other than shares, loans and other payables.

The data of the statistical questionnaire are based on accounting systems used by the government units. Government units however use different systems and some problems arise from it. For instance, health insurance bookkeeping system is not satisfactory for compiling of the national accounts – information on revenue and expenditure and now information from balance sheet, too.

It would be useful, to introduce an international accounting standard for government units, which are financed by the state budget (not only for corporations).

2.2 Information sources used for the quarterly general government national accounts is following:

- Financial statements,
- Statistical questionnaires
- Other information

The National Accounts Department is beginning with compiling quarterly non-financial and financial accounts for the general government. We try to compile these accounts for this year, but only experimentally.

Before 2003, quarterly information sources have been linked with estimates of GDP.

The MOF provides quarterly information on revenue and expenditure/profit and loss for budgetary organizations and-extra budgetary funds; balance sheet is provided only half-yearly.

Information on activities of semi-budgetary organizations is provided only half-yearly (by the MOF, too).

Other extra-budgetary funds will provide their financial statements quarterly.

In 2003 a quarterly questionnaire (PO 3-04) for semi-budgetary organizations, and for public universities was introduced. It includes information on current non-financial transactions and on stock of assets.

Other information will be similar as for the annual national accounts, i.e. from the ministries and from the CNB.

As to quarterly non-financial general government accounts: it is very surprising, that the Regulation of EU is not harmonized with the Draft of Regulation on quarterly non-financial accounts for institutional sectors.

3. General compilation methods

3.1 Main features of the general government accounts

For each sector and sub-sector, the compilation of non-financial accounts and financial accounts is integrated; it is done by the same person and based on the same data sources (revenue and expenditure or profit and loss statements and balance sheets or statistical questionnaires). This method is designed to reduce inconsistencies between non-financial and financial accounts.

This method is used for each information source, sub-sector and sector.

The process of compiling national accounts has several **stages**

a) The first stage: represents **taking over survey data** and classification of their figures into accounts according to the basic documents. It means that for the central government sub-sector are compiled 19 sheets according to the basic documents.

b) The data sometimes have to be **corrected** if errors are found in the sources data

c) The third stage includes 2 types **of methodological adjustments**:

   - Adjustments due to differences between business and national accounting rules
   - Adjustments relating to “under-coverage”

Adjustments due to differences between business and national accounting rules mainly relate to:

- holding gains/losses [adjustments of gross output (GO), intermediate consumption (IC), changes in inventories];
- financial leasing [adjustments of gross fixed capital formation (GFCF)]
- financial leasing repayments [adjustments of GO, IC];
- gross fixed capital formation [adjustments of GFCF, IC];
- consumption of fixed capital (CFC) [adjustment of CFC, GO];
- purchase of military weapons and their supporting systems [adjustments of GFCF, IC, GO, government final consumption]
- wages in kind recorded in business accounts [adjustments of GO, IC, W & S, household private consumption (HPC)];
- cash-based and accrual-based payments (adjustments of taxes, social and health contributions);
- insurance services [adjustments of GO, IC].

The last stadium of compiling NA concerns adjustments for "under-coverage" in compliance with the Pilot Project on Exhaustiveness. As to government accounts, no such adjustment is calculated. The government covers all units, all units are surveyed; it is supposed that no illegal activities are not curried out etc.

Some examples of the adjustments:

Wages and salaries in kind
Types of wages and salaries in kind are following: taxable wages and salaries in kind, meal vouchers, contribution from social funds, per diem for business trips, expenditure on clothing of regular members of the armed forces, other social expenditure covered from costs, housing contributions, goods at a reduction price and provided free of charge, remitted interest, company cars used for personal needs, board and lodging provided free of charge.

Real estimation of different types wages in kind is based on combining data from different sources. As to the general government – information is surveyed in statistical reports on total labour costs, in financial statements (i.e. social costs) or it is surveyed separately, e.g. expenditure on clothing of non-civil persons for the Ministry of defence, the Ministry of the Interior and the Ministry of Justice. Social costs and other social expenditure covered by costs or own funds of an employer include allowances on recreation, cultural or sports events, contributions on purchases of meal vouchers, goods and services at reduction price and provided free charges, company cars used for personal needs etc. Per Diem on business trips (meal and drinks) are estimated as part of surveyed travelling costs (30% as part of wages and 70% as part of intermediate consumption.

In 2000 wages and salaries reached CZK 3 737 million, i.e. 4,6% of the wages. The amount was added to the wages (D.11) and CZK 50 million of the total amount was added to the output (about 1%), i.e. especially goods and services at reduction price and provided free charges, company cars used for personal needs.

Gross fixed capital formation (GFCF) and small tools
Expenditure on tangible assets (small tools) whose price is higher than CZK 20 thousands but lower than CZK 40 thousands and expenditure on intangible assets is recorded in intermediate consumption. Therefore, the gross fixed capital consumption has been adjusted.

Based on results from the special survey some adjustments to GFCF in 1998,1999 and 2000 were made. In 2000, it was CZK 4 billion in the general government) – intermediate consumption was decreased (P.21) and acquisition of fixed assets was increased. It was about 3,0% of total GFCF of the government sector.

From the year 2002 the required information on expenditure on small tools is being collected as part of annual statistical questionnaires by all sectors (except for the household sector

Consumption of fixed capital and capital stock
In the Czech Republic up to now so-called balances of non-financial assets have been compiled for individual sub-sectors, broken down by types of assets and industries (on 3-digit level of NACE). The capital stocks (CS) have been valued at acquisition prices and net prices, according to bookkeeping principles (i.e. at historical prices and service lives according to income tax law). The valuation of capital stock at historical prices does not correspond with the ESA92 methodology and has been as one of the weakest points of the Czech national accounts. And consumption of fixed capital (GFC), for some types of fixed assets, was not calculated.

Generally, two methods have been used to calculate CS and CFC at replacement prices, i.e. price quantity method and PIM method.

A substantial work is being performed to estimate capital stock of roads, highways and local roads and service lives (dwellings):

a) roads, highways and local roads: Special units, which are engaged in administration of roads and highways and research institutions, have estimated the value at replacement prices of roads and highways including bridges, tunnels and airports. For instance, roads were broken down into three types, by construction period (before 1970, 1980, 1990 and 2000). Information on number of kilometres and number meters of roads has been available. Bridges were broken down by seven categories by their quality etc. In 2000, consumption of fixed capital for the general government sector was increased (40%).

b) dwellings – Four basic sources have been used to calculate CS and CFC of dwellings at replacement costs, i.e. census of flats and houses curried out in 2001 (number of flats and houses and legal status of owners),

data from Cooperatives association and from the Ministry for Regional Development (privatisation), data from building organizations and estate agencies (average price per square meter of floor area) and data from statistical surveys (e.g. on investment cost, number of family houses, communal dwellings and cooperative dwellings). Results for the general government in 2000 are following:

General government	Net capital stock		Consumption of fixed capital	
	mil. CZK	%	mil. CZK	%
Total AN.11	3 572 934	100	116 712	100
AN.1111	329 316	9,2	9 078	7,8

Dwelling services
The contribution of the dwelling services is 3,4% to the government GDP.
The estimation of the output of the dwelling services is based on user cost method. The government ownership reaches about 18% and private rented dwelling about 5% of the total dwellings stock. The government regulates of the rent in the public dwellings and there is a great disparity between public and private rents.

d) Very important stage is the last stage: **balancing process.** The process starts after compiling of all sub-sectors / sectors accounts. Items of non-financial accounts, especially concern with items of goods and services account, are balanced before anything else. Than are balanced items of capital and financial accounts with items of balance sheets and revaluation and other changes in volume, too.

3.2 Accrual and cash basis

Data on revenue and expenditure for budgetary organizations and state extra-budgetary funds are only on cash basis. Therefore, they must be adjusted.

However, only amounts of taxes, social and health insurance contributions and interests are adjusted on accrual basis. Information on output or intermediate consumption is no adjusted on accrual basis. We have no information for it.

The MOF calculates taxes by the time adjustment method (in compliance with recommendation of the Eurostat) and interests on securities other than shares on accrual basis. The CSO National Accounts Department calculate of social and health insurance contributions on accrual basis. The calculation is based on provided monthly cash data.

Information on subsidies and social benefits are treated as data on accrual basis. The subsidies depend on resources of the state budget and an institutional unit has no legal claims on it; the government has no liabilities.

The MOF does not intend to introduce accounting system on accrual basis for budgetary organizations and for extra-budgetary funds, in short time.

3.3 Consolidation

Consolidation in the National Accounts is calculated for items

- D.73 – Current transfers within general government,
- D.92 - Investment grants
- D.99 - Other capital transfers

D.73 is broken down in two items, i.e.
D.731 - Current transfers among general government sub-sectors
D.732 - Current transfers within the central or local government
Basic information is obtained from financial statements and final reports
Each of the items D.92 and D.99 is broken down into three sub-items
D.921 - Investment grants among general government sub-sectors
D.922 - Investment grants within the central or local government sub-sector
D.923 – Investment grants to other institutional sectors/sub-sectors

The similar approach is used for D.99

D.41 – Interest: the item has not been consolidated. Consolidated interest can be calculated only on securities other than shares issued and hold by the government. We do not have available information about it, yet. Interest on loans is only on banking loans. The loans among government units are without interest.

Consolidation in the national accounts is problem as to information on stocks of financial assets – from balance sheets. Available information on securities other than shares, loans or other receivables and other payables does not exist. Especially it concerns of loans between local government units.

At the present time we do not have information on financial assets according their counterparts – from - whom-to whom

The future tasks:

* calculation of output (P.1) and intermediate consumption (P.21) of budgetary organizations on accrual basis;
* dividing of the social benefits in kind in compliance with the Regulation No 1550/2000, i.e. social security benefits in kind provided by market and non-market producers
* classification of government expenditure and revenue according to purpose
* compiling of the quarterly government non-financial and financial accounts

A Simple Question Without A Simple Answer: How Important Is Public Sector Employment? [1]

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Abstract

Employment is one of the most commonly used indicators for the size and importance of establishments as well as for economic sectors. For this reason alone one would expect statistics on public sector employment to be easily available and reasonably comparable internationally, e.g. between the member countries of the European Union. However, one of the more surprising facts about official statistics is that most countries have rather poor statistics on employment in the public sector, and about the characteristics of those working for the public sector. It is also difficult to find statistics on public sector employment which are reasonably comparable over time and between countries, not least because a stable and consistent dividing line between the 'public sector' and the rest of the economy is difficult to draw in practice. This paper reviews some of the reasons for this as well as some of the quality issues involved in measuring public sector employment. It also relates various quality concerns to four types of issues for which such statistics may be desired: describing the importance of public sector employment in national labour markets, as well as the direct impact on public sector employment of variations in public budgets; analyzing the productivity of the public sector; and describing the impact on the affected workers of privatization or sub-contracting of activities which previously have been carried out by (the staff of) public sector units. The hope is that this review can contribute to a better understanding of the issues and eventually also to an improvement of the current situation.

Introduction

In 1994 the OECD published *Statistical Sources on Public Sector Employment*, prepared jointly by its (then) *Public Management Service Unit (PUMA)* and the *ILO Bureau of Statistics* (see *OECD & ILO, 1994*). This publication tried to describe the situation in the then 24 OECD member countries[2] with respect to available statistics on public sector employment (SPSE), and concluded that "in many countries public employment statistics suffer from being collected by more than one institution without proper coordination"; and that "strict adherence to international standard definitions is the exception rather than the rule". Thus it is not surprising that "comparing national concepts of the public sector is intrinsically difficult, especially in respect of public enterprises and certain forms of public services" and that " .. differences in definition and terminology constitute the main difficulty". The number of sources described for the countries ranged from only one to seven. Four of the countries with only one source indicated that this was the Labour Force Survey. More detailed information was presented for its 25 member countries in *OECD, 1997b*, referring to the situation in the first half of the 1990s.

[1] The original version of this note was presented at the *11th Statistical Days: A New Millennium –New Phenomena: Have Statisticians Been Able to Understand and Measure Them*, in Radenci, Slovenia 26-28 November 2001, and a slightly revised version for presentation at the ***27th General Conference of The International Association for Research in Income and Wealth Stockholm, Sweden. August 18-24, 2002*** was prepared in June 2002. The present version was completed in September 2003. Comments from Adriana Mata Greenwood, Anne Harrison, Robert Pember and Sylvester Young have improved earlier drafts, but remaining errors as well as the views and opinions expressed are those of the author, and are not necessarily shared by the ILO or its Bureau of Statistics. Comments and suggestions for improvements are welcome. E-mail: Hoffmann@ilo.org

[2] Mexico was not included in the review as it joined OECD as its 25th member only in May 1994.

In 1998 the ILO received SPSE from 84 countries[3], having requested on a trial basis such statistics for 1985, 1990, 1995 (or years close to these) as well as for the latest year for which statistics were available. To establish whether these statistics could be provided by countries on a regular basis the trial was repeated in 1999 and in 2001, expanding to 128 the total number of countries and territories for which some statistics of this type is available at the ILO[4]. Results have been presented in *Hammouya, 1999* and *BIT, 2001*, and are available on request from the ILO. The sources that have been indicated for the statistics provided are labour force surveys, establishment surveys, administrative records and 'combination of different sources' in almost equal measure, but with the last 'source' indicated slightly more frequently than the others, and administrative records slightly less frequently. The statistics that OECD has collected from its member countries have also included statistics on public sector pay (see e.g. *OECD, 1997a* as well as *OECD, 1999* and *2001a*).

This note tries to build on the experiences of these exercises to throw light on the reasons for the difficulties encountered by those who have tried to obtain statistics on public sector employment that are both reasonably comparable over time and between countries, also taking other quality concerns into account. It also tries to relate this discussion to four main descriptive and analytical issues for which statistics on employment in the public sector will be needed, as consideration of what one may consider to be satisfactory quality for such statistics will depend on the questions that they are asked to help answer. The four sets of issues are: (i) describing the importance of public sector employment in national labour markets; (ii) describing the direct impact on public sector employment of variations in public budgets; (iii) analyzing the productivity of the public sector; and (iv) describing the impact on the affected workers of privatization or sub-contracting of activities which previously have been carried out by (the staff of) public sector units.

General observations on quality issues for statistics on public sector employment

The quality of official statistics normally are discussed with reference to the following dimensions, see e.g. the article by Platek & Särndal in the March 2001 issue of the *Journal of Official Statistics* and the comments there by Bailar, Fellegi and Norbotten:

- population coverage;
- units of observation;
- timeliness and frequency;
- geographic resolution;
- consistency with other statistics and over time;
- main and descriptive variables, in terms of
  - validity and consistency of definitions;
  - resolution and validity of value sets;
  - reliability of measurements;
- costs of production and dissemination.

Delineation of 'public sector employment'

For a discussion of the quality of SPSE the issue of the validity and consistency of the definition of the main variable, i.e. employment in the public sector, will be equivalent to the issue of population coverage, as the main issues of concern will be (a) how to draw the distinction between 'the public sector' and the rest of the economy, and (b) how to define "employment". For issue (a) we may use as reference the definitions provided by the international guidelines in the *System of National Accounts* (see *United Nations et al, 1993*), where it is said that the *Public Sector (PS)* should consist of "all institutional unit that can be said to be (i) units of central, state or local government; (ii) all social security funds at each level of government; (iii) all non-market non-profit institutions that are controlled and mainly financed by government; and (iv) corporations and quasi-corporations that are controlled by governments, where units of type (i)-(iii) are called 'general government' and units of type (iv) are called 'public corporations' (see chapter IV of *United Nations et al, 1993*). All persons employed by the PS therefore have to be employed by such units, and they have to be regarded as *employees*.[5]

[3] Of the 24 countries that gave methodological information to the OECD/ILO inquiry in 1993 only 13 provided statistics in 1998. Following the 2001 updating this number has increased to 17 of the 24 countries.

[4] For two countries, France and Saudi Arabia, the information had not yet been entered into the database when this paper was drafted, and they are therefore not included in the list of countries in the annex.

While the most useful definitions for *national* users of SPSE need not necessarily be the same as the international ones the issue will always be whether (i) the statistics produced will cover and identify separately those units which correspond to the relevant (for the user) definition of PS, and (ii) whether the statistics will include all persons who are to be considered 'employees' of these units. To understand why these requirements are surprisingly difficult to satisfy in practice it is necessary to examine the three main types of sources for SPSE: administrative records, surveys of PS units and surveys of households.

Direct use of administrative records on the public sector units (DUAR/PSUs) would seem to be the most obvious and promising source for SPSE: PSUs are formal units that have to keep records to account for how they spend the funds which they are given or earn, and for most of these units the payment of wages and salaries will be the main type of expenditure. These expenditures are (supposed to be) recorded according to standard regulations and subject to careful auditing. However, in practice the following factors may tend to undermine DUAR/PSU as a source for SPSE: (i) There may be no central compilation based on the administrative records for all relevant units; and (ii) if there is a central compilation of records for all units this may be a purely financial one without any information about the type of expenditures or the number of employees involved.[6] In some countries there will be a central register of government employees, e.g. to manage a health insurance or pension scheme or for personnel management more generally. However, such registers will often be limited to employees with the types of contracts which qualify them for such benefits, or exclude certain types of units or staff, depending on the relevant legislation. An additional, often related, complication is that even units which are covered by the relevant legislation may have the possibility of hiring workers on contracts which makes it seem, from a budgetary and therefore also from an accounting perspective, that these workers are not hired for salaries, but receive payment for the delivery of services. Such workers may therefore not appear in the relevant records as 'government employees', even though the terms of their contracts otherwise correspond to those of 'employees', e.g. in terms of working hours, basis for payment, the extent to which they are subject to instruction and supervision etc. Thus DUAR/PSUs for the production of SPSE will (i) be a realistic option only in countries where the necessary institutional infrastructure has been established and is functioning well; and (ii) be subject to the same quality concerns as DUAR are for other types of statistics, see e.g. *Hoffmann, 1995* and *ILO/EASMAT*, *1997* for further discussions.[7]

Surveys and censuses of 'public sector' units, e.g. as part of more general establishment surveys or censuses, will be a possible source for SPSE provided (i) there exists a satisfactory register for such units; and (ii) the units keep records which will make it relatively easy for their administrations to provide the type of information needed for all persons hired as 'employees', in the sense required for the statistical descriptions and analysis and not only according to the rules and regulations of financial control and staff management referred to above. It may be necessary to carry out such surveys and censuses by visiting the sites of the PSUs in countries and situations where there is reason to suspect that the records kept by some PSUs will include a significant number of "ghost-workers", i.e. 'persons' to whom salaries are being paid although they do not exist or at least do not do any work for the PSU in question.

Surveys and censuses of households will be a possible source provided the employed persons can be asked questions about their work contract and their place of work with response alternatives which make it possible to determine (i) whether or not they are 'employees'; and (ii) whether or not their employer is a 'public sector' unit. Neither of these provisions is trivial, i.e. easy to implement, see e.g. *Gilbert, 2001* or *United Nations & ILO, 2002*. The most difficult units to classify correctly are probably those non-profit institutions that are controlled and/or mainly financed by governments. Whether this is the case for the unit employing them may not be evi-

[5] For a definition of "employees" see e.g. chapter VII of *United Nations et al, 1993,* which is consistent with the definition of 'paid employment' in the *International Classification of Status in Employment (ICSE-93)*, see e.g. *ILO, 2000*. However, this is a definition which is surprisingly difficult to implement precisely, as discussed in this paper and illustrated in the diagrammatic presentation of ICSE-93 in annex 2, prepared by Adriana Mata Greenwood.

[6] It is quite common that (some) government units will have both a financial budget and a 'staff budget', where the latter is a specified total number of 'posts' of different types which they are allowed or supposed to fill. However, the number of such 'posts' will not necessarily correspond to the number of 'employees', either because some are unfilled or because persons can be engaged on different forms of contracts depending on whether the 'wage' funds or funds for the purchase of goods and services are being used for their payment. When using the latter funds the contracts will usually be for a limited period only, but they may be subject to several renewals. An additional problem is that 'staff budgets' will normally not specify any personal characteristics of the employees (except when there are quotas for certain types of employees, e.g. by rank or type of pay scale), or where quotas for certain population groups have to be satisfied.

[7] Note that registers of all employees or all employed persons in a country, kept e.g. for national social insurance schemes or by tax authorities, may also be a possible source, **provided** public sector units can be identified as a separate type of 'employer'.

dent to those working for them, especially if formal ownership rests with a private organization. The most difficult contractual situations to establish correctly are again those where the persons are not hired as regular 'public employees', e.g. for budgetary reasons, but as some form of 'outworker' as mentioned above (see also e.g. paragraphs 7.26-7.30 in *United Nations et al, 1993*).

Timeliness

The timeliness of statistics based on the three types of sources mentioned above will depend on a number of factors: For statistics based on DUAR the timeliness will generally depend on (i) the reporting frequency to the central register(s); (ii) the delays in sending the reports; and (iii) the time needed by the administrative system to process the reports it receives and to make them available for the production of statistics. The reporting for public sector employees (PSE) will be either a continuous reporting of hirings and separations , or the reporting at set intervals about the movements of staff during a defined period and/or the number of staff at the end of that period. For the former type of reporting factor (i) will not be relevant, but the other two factors may influence the timeliness to a significant degree. The timeliness of survey results depends on the objectives and the resulting designs for the surveys and the capacity of the survey organisation.

Frequency

For statistics based on DUAR the possible frequency will again depend on the type of reporting system used. With continuous reporting of hirings and separations one can in principle imagine a very high frequency for the statistics, e.g. that new statistics could be produced every week or every month. For periodic reporting systems the possible frequency will be determined by the reporting periods. Statistics based on surveys of SPSU or on households can only be produced with the frequency with which these surveys are undertaken (or, in the case of continuous surveys, by which the results are being prepared).

Geographic resolution

Two factors will determine whether SPSE based on DUAR or SPSU can be produced for local labour markets: The first is the geographic detailing provided by and for the reporting (employing) units and the second is the limitations set by any confidentiality requirements. The latter may be as relevant for public sector units (PSUs) as they are for private establishments, as some PSUs operate in markets and others have e.g. tasks linked to national security or intelligence that are so sensitive that even their size, as indicated by their total employment, must be kept confidential. The former factor depends on how the records of the PSUs are organised and their content: A multi-site operation like the Postal Services may have centralised the personnel management functions to a few locations, and this may mean that from the reports submitted it may seem that these are the only locations where the Postal Services have employees.[8] For statistics based on surveys of PSU or households the main determinant for geographic specifications will (also) be the limits imposed by the size and design of the sample. It should also be noted that while statistics based on DUAR and SPSU normally will give statistics according to the location of the place of work, the statistics based on a LFS normally will be according to the employees' place of residence.

Consistency over time

For statistics based on DUAR/PSU consistency over time may be undermined by (i) changes to the type of institutions which are included in the reporting system; and (ii) changes to the rules about the type of staff (employment contracts) which should be included in the reporting. Particularly vulnerable to such changes are the reporting of those employees who are to be included as a function of particular types of contracts and/or membership in specific insurance or pensions schemes. Changes to the coverage of such rules and schemes may happen quite frequently, and the new groups to be included or the groups to be excluded may frequently be large enough to create serious inconsistencies in the time series, unless great care is taken to ensure that consistent results are presented.[9]

Consistency with other statistics

SPSE frequently need to be consistent with statistics on other aspects of public sector activities, e.g. total expenditure by purpose, as well as with statistics on other forms of employment. The former because labour and

[8] This example has been taken from the experience with an actual reporting system. The situation was corrected..

[9] Not acceptable is just a listing of changes that have taken place, with the comment that "these changes must be remembered when using statistics for different years".

human capital are the most important inputs used by these activities, and the latter because the PS is employing a (very) large proportion of the most important national resource, its labour force. It seems clear that it will be a significant advantage for the combined use of statistics on public sector employment and expenditures, e.g. for preparing estimates for the *national accounts*, if the basic data for both sets of statistics can be extracted from (consistent) records of the same units. However, for the description and analysis of PSE as a part of total employment it will be better if those employed in the PS can be identified separately in statistical sources which cover all employed persons. Otherwise the issues of how to best combine (labour) statistics from different sources will become urgent, see e.g. *Hoffmann, 2000*.

Main and descriptive variables

Statistics on employment always involve as a key variable a count or estimate of the 'number of persons' who are members of the group of interest. This means that the unit of measurement for this variable is 'one person'. However, because persons can be employed to different degrees during the reference period, expressed e.g. by the 'number of hours actually worked', it is often considered as relevant to measure the latter variable[10] as well or instead of the total number of persons employed. Information on 'actual hours worked' is normally easier to obtain with a labour force survey than with the other data collection instruments, as the latter normally only provide approximations from information about whether the employees have a full time or a part time contract, or on the total number of time units paid for, some of which may represent absences (e.g. vacation or sick leave) or bonuses. In most countries the issue of distinguishing between a 'head count' employment variable and a variable reflecting the amount of work performed during the reference period is even more important with respect to SPSE than with respect to other statistics on employment, because the public sector tends to be more 'flexible' in the working time arrangements than other employers.

The above mentioned 'groups of interest' among the PSEs are those which can be described by demographic variables and 'educational attainment', as well as those describing the type of work being done, i.e. 'occupation', and the type of activity, i.e. 'industry'. The need for a good description of the contractual situation has already been mentioned.

Costs of production and dissemination

As frequently observed, e.g. in *Hoffmann, 1995*, the costs to the statistical agency of producing statistics is to a large extent a direct function of the number of informants which have to be contacted to get the primary data. This is a main reason why DUAR often is seen as representing the most cost-effective way of producing official statistics where such sources are available to the statistical agency. As indicated one would expect this to be the case also with SPSE, but the methodological problems outlined will mean that to obtain the type of SPSE needed will entail significant costs in processing the available administrative records. Because of this it may be more cost effective to design general statistical data collection instruments for statistics on employment that will make possible the separate identification of those employed by the public sector, and to include the capture of information needed to identify separately different categories of such workers. In this connection it is significant that following the 2001 updating of the ILO Public Sector Employment Database (PSEDB) the statistics presented there are based on results from Labour Force Surveys and Population Censuses for 37 percent of the countries. For 23 percent of the countries the statistics have been based on surveys of public sector units or establishment surveys. Only 17 percent of the countries reported that the statistics were based on DUAR/PSU only.

Quality issues for statistics needed to describe the share of employment in the public sector in total employment

It is perhaps a bit surprising that most (popular) discussions about the size of the public sector use the share of a country's *Gross National Income* that is channeled through the public sector as the main indicator, as long as the above *cliché* that a country's workforce is its main resource holds true. One reason for this may be that national accounts estimates are more popular/prestigious and well known among economists and those partici-

[10] Note that e.g. "full time equivalents", "full work-weeks" or "work-years" are just less precise representations of this variable. Both *Mata-Greenwood, 2001* and chapter 4 of *OECD*, *2001b* discuss issues related to the estimation of total hours actually worked during a reference period.

pating in such debates than statistics about employment. It may also be relevant that it is much more difficult to assess the quality of the former estimates than of the latter statistics.

Measuring the share of public sector employment in total employment, for the country as a whole or for specific groups of interest, will involve the measurement of total employment as well as being able to clearly identify those who are employed by public sector units and to distinguish those persons who work for these institutions as *employees* from those who do so with other forms of contract. As indicated above in the comments on the problems of delineating public sector units and 'employees' with the different sources, the latter two tasks are not necessarily trivial: in particular if the ambition is to find solutions that will make possible reliable estimates of changes to public sector employment as the difference between the stock estimates at two different reference periods.[11] That the most appropriate definition of 'public sector' and 'employed by' will tend to depend on the particular analytical objective of an analysis will be an added complication, touched upon below.

Quality issues for statistics needed to describe the direct employment impact of variations in public sector budgets

One of the major functions of the public sector's expenditures is to regulate the total activity in the economy. The actual impact on the total activity of the economy in general and on the total, local and sectoral distribution of employment in particular are among the main questions which are frequently discussed in connection with a government's budget proposals. Most macro-economic models will have been designed to provide projections of the total and sectoral economic impact of such changes. Some of these models have modules for projecting the impacts on total and sectoral employment. These will reflect but not identify separately the direct impacts that come through the hiring (or retrenchments) of government employees as well as the indirect effects through changes in consumption because of the resulting increase (reduction) in income among government employees as well as among those producing services and goods purchased by the government. However, much of the discussion of concrete budget proposals is linked to the direct impact on employment in local labour markets or among particular groups of workers, and the statistics available to discuss these are often less than adequate for the task. Similarly the fact that empirical studies which separate the direct from the indirect employment effects are so difficult to find may be a reflection of the inadequacy of SPSE which can describe such direct impacts.

For such direct impacts to be described the SPSE must not only be available for relevant reference periods as well as for regional and institutional breakdowns that can be related to the changes in budget allocations, they must also make it possible to cover all those who are 'public sector employees' according to a relevant analytical definition. This means that it should be possible to identify separately all those who have 'non-regular' employment contracts with public sector units from those who have 'regular' ones.

From the comments above about the possible sources for SPSE it seems warranted to conclude that none of them on their own are particularly well suited to produce statistics which satisfy these requirements. The direct changes to public sector employment as a consequence of budget changes are not likely to be large enough to be measured reliably by Labour Force Surveys, and sources which rely on the financial records of PSUs and/or regular administrative registrations used to manage e.g. pension systems, are not likely to be able to capture those employed on 'non-regular' contracts. Thus for studies of the direct employment effects of variations in public sector budgets it would seem necessary to make use of surveys of PSUs which are specially designed to cover all 'paid employees', regardless of their type of contract.

Quality issues for employment statistics needed to describe productivity in the public sector

Discussions about how to measure productivity in the public sector tend to focus on all the difficulties which exist in finding a meaningful and complete set of measures of relevant outputs.[12] Mostly ignored has been the fact that in order to arrive at estimates of the productivity with which these outputs are being produced it is also necessary to have reliable and relevant estimates of the productive factors used to provide these outputs. As employed persons represent the most important of these productive factors in most public sector activities it is

[11] Estimates of changes can in principle be based on the net effect of hirings and separations, but the necessary information for this strategy does not seem to be available in any country.

[12] *Farrell, 1957* is often quoted as an important contribution.

clear that reliable and relevant measurements of this factor are essential for all productivity estimates, whether it is labour productivity or total factor productivity that is being estimated.

Although *OECD, 2001b* includes chapters on both the measurement of labour input (chapter 4) and the treatment of intermediate inputs (chapter 6) for productivity estimates there is no discussion of the issue mentioned above concerning the purchase of labour input services under other forms of contract than 'regular' contracts for employees; nor of any possible consequences for the most appropriate way of measuring labour inputs for estimates of productivity, as well as for measured changes over time and/or productivity differences between sectors. Such discussions would seem highly relevant, in particular when estimating productivity and discussing productivity changes in sectors where sub-contracting and different forms of contracts are frequent and changing, such as in construction and in different parts of the public sector. In order to be able to carry out such studies it will be necessary to get statistics on those who are employed on regular contracts as well as those who are engaged on other contracts to carry out very similar tasks as the staff who have (or had) regular contracts.

Improved efficiency or productivity and reduced overall costs are the usual arguments for privatizing the provision of services which are being provided to (parts of) the population by public sector units, or for 'outsourcing', i.e. sub-contracting certain functions related to the provision of such services (security, cleaning and catering being mentioned most frequently). To investigate whether such effects have in fact resulted from these reforms it will be necessary to have consistent statistics on production and value added as well as on employment. Only with such statistics it will be possible to study total productivity developments for the economy as well as productivity development in the various sectors, including their publicly owned parts.

Quality issues for statistics needed to describe the impact of privatization and outsourcing on total as well as public sector employment, and on the situation of public sector employees

The direct net employment effects of privatization of existing public sector units, e.g. in telecommunications, postal services or water supply, should in principle be reflected in statistics on the total employment in the relevant industry groups and its distribution between public and private sector units. This is why the ILO Database on Public Sector Employment (DBPSE) did request SPSE by industry, i.e. the tabulation categories of ISIC, rev. 3 and NACE, rev. 1. However, as indicated in the annex, only half of the countries reporting some SPSE could provide such statistics for industry categories.

Statistics which can describe the total net employment effects of outsourcing or subcontracting are much more difficult to obtain, both in principle and in practice. This is because it will be necessary to observe the employment effects on the "outsourcing" units and industry groups as well as on the units and industry groups which are being contracted to do the work being "outsourced". E.g. the outsourcing of cleaning and catering services from public sector hospitals and educational institutions will in principle reduce the public sector employment in ISIC Division 80 (education) and 8511 (hospital activities) and increase private sector employment in ISIC classes 5520 (restaurants, bars, canteens), 7493 (building cleaning activities) and 9301 (washing and (dry-)cleaning of textile and fur products). Even taking into account the possibilities of analyzing establishment based statistics on the extent to which certain forms of services are being purchased, i.e. by using the *Central Products Classification (CPC)* codes 63230 (catering services), 85330/40 (cleaning services general/special) and 97130 (laundry services), it is difficult to see that regularly produced statistics, or the input/output tables produced from them, are likely to provide the degree of detail and precision in measurements which will be needed for these types of studies.

The workers affected, the social partners and the policy makers are not only interested in net employment effects. They are also likely to request studies with statistics that can throw light on the effects on those who were working in the activities which were privatized or outsourced, as well as on workers for which the re-organization of these activities would represent new opportunities. This will normally mean that it will be necessary to design carefully "tracer-studies" to can track effects on the workers directly affected as well as effects on the contracting units and establishments which are contracted to provide the out-sourced services. Obviously such surveys will need to cover both employment and variables describing conditions of work, e.g. type of contracts, wages and hours of work.

Concluding remarks

Quality dimensions such as timeliness and frequency; geographic resolution; consistency with other statistics and over time; validity and consistency of definitions; resolution and validity of value sets; reliability of measurements; and the costs of production and dissemination of the statistics will be important for SPSE in almost all contexts. Nevertheless, the above comments on the statistical requirements for the four descriptive and analytical issues have focussed mostly on issues related to the need to, and difficulties of, getting statistics for all relevant forms of employment relationships which individuals may have to the PSUs in the latter's capacity as employers as well as purchasers of services. This to signal that here is an issue on which those producing SPSE will need to pay particular attention in order to obtain statistics that will serve important descriptive and analytical needs. Furthermore, it is clear that this issue is important not only for SPSE: changes to the contractual relationships between 'employers' and those workers who provide productive services to them have for a long time been said to be important for improving the 'flexibility' of labour markets in economically advanced countries. It seems to be a 'conventional wisdom' that to make easier, i.e. less costly, 'necessary' adjustments to the number of persons employed with a particular employer, public or private, in response to changes caused e.g. by new technologies and new international trading patterns, will be necessary to maintain satisfactory economic growth and ensure full employment in the long run.[13] Thus 'new' contractual forms between 'employers' and workers can be expected to (have) become important throughout the economies that experience such changes. This (will) have important consequences for the capacity of the traditional data sources to provide statistics that will validly and reliably measure levels and changes in employment, wages and productivity in different types of economic activities (sectors). Potentially there also seems to be important implications for validity of the SNA's distinction between 'compensation of employees' and 'operating surplus and mixed income' in the distribution of primary income.[14] Given the increased (re-) recognition of the importance of human capital acquired through education, trainings and experience as a factor of production and a source of economic growth, it may, however, be appropriate to regard an increasing proportion of the primary income that accrues to private households as representing a reward for the services provided by its human capital as well by any physical capital it owns. If this is the case, then the validity of a pure "compensation of employees" concept may prove to be very limited, and it may be more relevant to consider all employment-related income as a return to human capital.

[13] See e.g. the OECD's 'jobs study', *OECD,1994*. It may be relevant to observe that to 'flexibility' and lower costs of adjustments for employers may mean higher costs for workers and the society at large, in the form of having to carry a higher share of the economic risks and costs of such adjustment.

[14] See chapter VII in *United Nations et al, 1993* . In sectors and countries with less well developed standard employment contracts than those assumed by the SNA this distinction have always been rather difficult to apply with any degree of precision.

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Annex 1: ILO Public Sector Employment Database: List of countries indicating first and last year for which different statistics are available.

Country or territory	Total				Type of institution				Industry			
	Total		Women		Total		Women		Total		Women	
	First year	Last year	First year	Last year	First year	Last year	First year	Last year	First year	Last year	First year	Last year
Albanie	1993	2000	1993	1999	1993	1999	1993	1999	1995	2000	1995	1999
Argentina	1996	2000	1996	2000	...	...	...	...	1996	2000	1996	2000
Armenia	1985	2000	1985	2000	...	...	...	...	...	...	...	...
Australia	1985	2000	1995	1996	1985	2000	...	...	1995	2000	1995	1995
Austria	...	...	...	...	1985	1999	...	...	...	...	...	...
Azerbaijan	1985	2000	1985	2000	...	...	...	...	...	...	...	...
Bahamas	1986	2000	1986	2000	...	...	...	...	...	...	...	...
Bahrain	1981	1991	1991	1991	...	...	...	...	...	...	...	...
Barbados	1991	2000	1991	2000	...	...	...	...	...	...	...	...
Belarus	1995	1999	...	...	...	...	...	...	...	...	...	....
Belgique	1985	2000	1995	1999	1985	2000	...	...	1995	1999	1995	1999
Belize	1995	1997	1995	1997	...	...	...	...	...	...	...	...
BÈnin	1995	1997	1995	1997	1995	1997	1995	1997	...	...	...	...
Bermuda	1995	1999	1995	1999	...	...	...	...	1995	1999	1995	1999
Bolivia	1995	2000	...	...	...	...	...	...	1995	2000	...	...
Bosnia and Herzegovina	1985	1990	...	...	...	...	...	...	...	...	...	...
Botswana	1985	1999	1985	1999	1985	1999	1985	1999	1997	1999	1997	1999
Brasil	1992	1996	1996	1996	...	...	...	...	1996	1996	...	...
Brunei Darussalam	...	...	...	...	...	...	...	...	1995	1999	...	...
Bulgaria	1996	1999	1996	1999	...	...	...	...	1996	1999	1996	1999
Burkina Faso	...	1997	...	1997	...	...	...	...	...	...	...	...
Canada	1985	1997	...	...	...	...	...	...	1997	1997	...	...
Cayman Islands	1991	1996	...	...	...	...	...	...	...	...	...	...
Chile	1996	2000	1996	2000	...	...	...	...	1996	2000	1996	2000
China	1985	1996	...	...	...	...	...	...	...	...	...	...
Colombia	1991	2000	1991	2000	...	...	...	...	1991	2000	1991	2000
Congo	1995	2000	...	...	...	...	...	...	...	...	...	...
Costa Rica	1987	2000	1987	2000	1987	2000	1987	2000	1995	2000	1995	2000
Croatia	1985	2000	1985	2000	...	...	...	...	1985	2000	1996	2000
Cyprus	1985	1999	...	...	1985	1999	...	...	...	...	...	...
Czech Republic	1990	2000	...	...	1997	2000	...	...	1997	2000	...	...
Denmark	1996	2000	1996	2000	1996	2000	1996	2000	1996	2000	1996	2000
Dominica	1997	1997	1997	1997	...	...	...	...	...	...	...	...
Ecuador	1990	1997	...	...	...	...	...	...	1997	1997	...	...
Egypt	1985	1998	1985	1998	...	...	...	...	1995	1998	1996	1998
El Salvador	1989	1999	1995	1999	...	...	...	...	1995	1999	1995	1999
EspaÒa	1987	2000	1987	2000	1987	2000	1987	2000	1995	2000	1995	2000
Estonia	1995	2000	1995	2000	...	...	...	...	1995	2000	1995	2000
Ethiopia	1999	1999	1999	1999	1995	2000	1995	2000	1994	1994	...	...
Falkland Is. (Malvinas)	1996	1999	...	...	...	...	...	...	...	...	...	...
Fiji	1985	1996	1996	1996	...	...	...	...	1996	1996	...	...
Finland	1985	1999	1985	1999	1985	1999	1985	1999	1995	1999	1995	1999
Gabon	1995	1999	...	...	1995	1999	...	...	...	...	...	...
Gambia	1998	1998	1998	1998	...	...	...	...	...	...	...	...

Country or territory	Total				Type of institution				Industry			
	Total		Women		Total		Women		Total		Women	
	First year	Last year	First year	Last year	First year	Last year	First year	Last year	First year	Last year	First year	Last year
Georgia	1995	2000	1998	2000	1995	1999	1998	1999	1998	2000	1998	2000
Germany	1995	2000	...	...	1995	2000	1995	2000	...	...	...	...
Gibraltar	1985	1998	1990	1998	...	...	...	...	...	...	...	...
GrËce	1987	2000	1987	2000	...	...	...	...	1995	2000	1995	2000
Greenland	1996	1996	...	...	1996	1996	1996	1996	...	...	...	...
Guadeloupe	...	...	...	...	1995	1995	...	...	...	...	...	...
Guatemala	1985	1996	...	...	...	...	...	...	...	...	...	...
Hong Kong, China	1995	2000	1995	2000	...	...	...	...	1995	2000	1995	2000
Hungary	1992	1999	1992	1999	1992	1999	1992	1999	1995	1999	1995	1999
India	1985	1999	1985	1999	1985	1999	1985	1999	1995	1999	1995	1999
Indonesia	...	...	...	...	1995	1995	...	...	...	...	...	...
Iran, Islamic Rep. of	1986	1996	1986	1996	...	...	...	...	1986	1996	1996	1996
Ireland	1990	1996	...	...	...	...	...	...	...	...	...	...
Isle of Man	1996	1996	1996	1996	...	...	...	...	1996	1996	1996	1996
Italie	1988	2000	1988	2000	1988	2000	1988	2000	...	...	...	...
Japan	1986	1996	1986	1996	1986	1996	1986	1996	1986	1996	1986	1996
Jordan	1995	1998	1995	1998	...	...	...	...	1995	1998	1995	1998
Kazakstan	1994	1998	...	...	...	...	...	...	...	...	...	...
Kenya	1985	2000	...	...	...	...	...	...	1995	2000	...	...
Korea, Republic of	...	...	...	...	1995	1996	...	...	...	...	...	...
Kyrgyzstan	1995	1999	...	...	...	...	...	...	1995	1999	...	...
Latvia	1997	1999	1997	1999	1997	1999	1997	1999	1997	1999	1997	1999
Lithuania	1995	1999	1995	1999	...	...	...	...	1995	1999	1995	1999
Luxembourg	1997	2000	1997	2000	...	...	...	...	...	...	...	...
Macau, China	1985	2000	1985	2000	...	...	...	...	...	...	...	...
Macedonia, TFYR	1995	2000	...	...	...	...	...	...	...	...	...	...
Madagascar	1995	2000	...	...	...	...	...	...	...	...	...	...
Malawi	1985	1995	1995	1995	...	...	...	...	1995	1995	...	...
Malaysia	1985	2000	1985	2000	1985	2000	1985	2000	...	...	...	...
Malaysia: Sabah	1999	2000	1999	2000	1999	2000	1999	2000	...	...	...	...
Malaysia: Sarawak	1999	2000	1999	2000	1999	2000	1999	2000	...	...	...	...
Maldives	1995	2000	1995	2000	...	...	...	...	1995	2000	1995	2000
Malta	1995	1998	1998	1998	...	...	...	...	...	...	...	...
Maroc	1995	2000	...	...	...	...	...	...	...	...	...	...
Martinique	...	...	...	...	1995	1995	...	...	...	...	...	...
Mauritius	1985	2000	1985	2000	1985	2000	1985	2000	1995	2000	1995	2000
MÈxico	1988	1996	...	...	...	...	...	...	1996	1996	...	...
Moldova, Rep. of	1985	2000	...	...	...	...	...	...	1996	2000	...	...
Myanmar	1996	1996	1996	1996	...	...	...	...	...	...	...	...
Namibia	1999	1999	1999	1999	...	...	...	...	...	...	...	...
Netherlands	1995	1997	1995	1997	1995	1997	1995	1997	...	...	...	...
New Zealand	1985	1997	1997	1997	...	...	...	...	1997	1997	...	...
Nicaragua	1995	1998	...	...	1995	1998	...	...	...	...	...	...
Norway	1985	1999	...	...	1985	2000	1985	1997	1985	1999	...	...
Oman	1997	1997	...	...	...	...	...	...	...	...	...	...
Panam·	1985	2000	1985	2000	...	...	...	...	...	...	...	...
Paraguay	1995	1999	1995	1999	...	...	...	...	1995	1999	1995	1999

Country or territory	Total				Type of institution				Industry			
	Total		Women		Total		Women		Total		Women	
	First year	Last year	First year	Last year	First year	Last year	First year	Last year	First year	Last year	First year	Last year
Philippines	1985	1999	...	...	1995	1999	...	...	...	...	...	...
Poland	1990	1996	...	...	...	...	...	...	1996	1996	...	...
Puerto Rico	1985	2000	1985	1988	1985	2000	1985	2000	1985	2000	1997	2000
Qatar	1997	1997	1997	1997	...	...	...	...	1997	1997	1997	1997
RÈp. arabe syrienne	...	...	...	...	1995	1997	1995	1997	...	...	...	...
Rep˙blica Dominicana	1995	2000	...	...	1995	2000	...	...	...	...	...	...
RÈunion	1995	1999	...	...	1995	1999	1995	1999	...	...	...	...
Roumanie	1985	2000	1985	2000	...	...	...	...	1995	2000	1995	2000
Russian Federation	1990	1995	...	...	...	...	...	...	...	...	...	...
Saint-Marin	1985	1999	1985	1999	...	...	...	...	1995	1999	1999	1999
SÈnÈgal	1985	2000	...	...	...	...	...	...	...	...	...	...
Seychelles	1990	1995	...	...	...	...	...	...	...	...	...	...
Singapore	...	...	...	...	1995	1999	...	...	...	...	...	...
Slovakia	1995	2000	...	...	...	...	...	...	...	...	...	...
Slovenia	1995	2000	1995	2000	1995	2000	1995	2000	1995	2000	1995	2000
South Africa	1994	2000	...	...	1994	2000	...	...	...	...	...	...
Sri Lanka	1994	1994	1994	1994	...	...	...	...	...	...	...	...
St. Helena	1995	2000	1996	1996	...	...	...	...	...	...	...	...
Suisse	1995	1998	1995	1998	1995	1998	1995	1998	1995	1998	1995	1998
Suriname	1985	1999	...	...	...	...	...	...	...	...	...	...
Sweden	1987	1999	1995	1999	1990	1999	1995	1999	...	...	...	...
Tanzania, United Rep. of	1984	1991	1991	1991	...	...	...	...	1991	1991	...	...
Tchad	...	...	...	...	1998	2000	...	...	...	...	...	...
Thailand	1985	2000	1985	2000	...	...	...	...	1985	2000	1985	2000
Togo	1986	1996	1986	1996	...	...	...	...	1986	1996	1996	1996
Trinidad and Tobago	1987	1997	...	1997	...	...	...	...	1997	1997	...	...
Turkey	1995	2000	1995	2000	...	...	...	...	1995	2000	1995	2000
Uganda	1995	1999	1995	1999	...	...	...	...	1997	1999	1997	1999
Ukraine	1997	1997	...	...	...	...	...	...	...	...	...	...
United Kingdom	1985	2000	...	...	1995	2000	...	...	...	...	...	...
United States	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000
Uruguay	1995	2000	1995	2000	...	...	...	...	1995	2000	1995	2000
Venezuela	1995	1999	...	...	...	...	...	...	...	...	...	...
Yemen	...	...	...	...	1998	1998	...	...	...	...	...	...
Zimbabwe	1985	1999	1985	1999	1985	1999	1985	1999	1985	1999	1985	1999

18 October 2001

Annex 2: Framework for the identification of status in employment

<table>
<tr><th colspan="2" rowspan="2">Status in employment categories</th><th colspan="4">Determining economic risk</th><th colspan="7">Area of authority</th></tr>
<tr><th>Object of transaction</th><th>Basis for remuneration</th><th>Works on a continuous basis (1)</th><th>Responsibility for labour and social protection</th><th>Client</th><th>Place of work and working schedule determined by</th><th>Instructions/ supervision</th><th>Important work inputs owned by (3)</th><th>Labour contract with</th><th>Engages employees on a continuous basis (1)</th><th>Takes operational decisions</th></tr>
<tr><td rowspan="6">In paid employment</td><td>Core (regular) employee</td><td rowspan="6">labour</td><td rowspan="5">for time worked or work done</td><td rowspan="2">yes</td><td>employer</td><td colspan="5" rowspan="2">employer</td><td rowspan="2">No</td><td rowspan="2">at employer's discretion</td></tr>
<tr><td>Employee with stable contract</td><td rowspan="5">-</td></tr>
<tr><td>Owner manager of incorporated enterprises</td><td rowspan="4">-</td><td>employer</td><td colspan="2">-</td><td colspan="2">employer</td><td>-</td><td>Yes</td></tr>
<tr><td>Work gang members</td><td colspan="5">employer</td><td rowspan="2">No</td></tr>
<tr><td>Temporary work agency employee</td><td>employer A</td><td colspan="2">employer B</td><td></td><td>employer A</td></tr>
<tr><td>Apprentices and trainees</td><td>for time worked or work done partly in training</td><td colspan="5">Employer</td><td>No</td></tr>
<tr><td rowspan="8">In borderline situations</td><td>Workers in precarious employment (2)</td><td colspan="2">-</td><td>no</td><td></td><td colspan="7" rowspan="2">-</td></tr>
<tr><td>Workers in employment promotion schemes</td><td>labour</td><td>for participating in the scheme</td><td>-</td><td>self</td></tr>
<tr><td>Outworkers</td><td rowspan="3">-</td><td>for work done</td><td rowspan="6">-</td><td rowspan="4">self</td><td>one or more employers</td><td>self</td><td colspan="3">employers</td><td>-</td><td>restricted</td></tr>
<tr><td>Contractors</td><td>for time worked or work done</td><td colspan="5">employer</td><td>-</td><td>restricted</td></tr>
<tr><td>Franchisees</td><td>goods or services</td><td rowspan="2">for profit form goods and services sold</td><td>one or more buyers</td><td>self (or client)</td><td>owners of work inputs</td><td>others</td><td>owners of work inputs</td><td>-</td><td>Restricted</td></tr>
<tr><td>Contributing family workers</td><td>labour</td><td>-</td><td colspan="5">family member managing the establishment</td><td>no</td><td>no</td></tr>
<tr><td rowspan="6">In self employment</td><td>Subsistence workers</td><td>goods</td><td>Own consumption</td><td rowspan="5">self</td><td colspan="5">self</td><td>no</td><td>yes</td></tr>
<tr><td>Members of producers cooperatives</td><td rowspan="4">goods or services</td><td rowspan="4">for profit from goods and services sold</td><td rowspan="4">one or more buyers</td><td colspan="4">all members of cooperative on equal footing</td><td>-</td><td>as member</td></tr>
<tr><td>Sharecroppers</td><td colspan="2">self</td><td colspan="2">others</td><td>-</td><td>restricted</td></tr>
<tr><td>Communal resource exploiters</td><td>-</td><td>-</td><td>community</td><td>self</td><td>-</td><td>yes</td></tr>
<tr><td>Core employer</td><td colspan="3" rowspan="2">self (or client)</td><td rowspan="2">self</td><td rowspan="2">self (or client)</td><td colspan="2">yes</td></tr>
<tr><td>Core own account worker</td><td>no</td><td>yes</td></tr>
</table>

Notes:
- not relevant for defining the group

(1) A period of employment which is longer than a specified minimum determined according to national circumstances.
(2) Include (a) casual workers: with contracts of short duration; (b) workers in short-term employment: with longer contracts than casual workers but shorter than regular workers; (c) workers in seasonal employment: whose (short) period of employment is influenced by seasonal factors.
(3) Refers to owners of most means of production, operational licenses or suppliers of credit.

Table 1. Indicators of the size of the public sector in the year 2000

	1 Total tax rate %/GDP	2 Public expenditures %/GDP	3 Public consumption expenditures %/GDP	4 Public investment %/GDP	5 Value added of the general government %/GDP	6 Employment in public sector per population of 1000	7 Gross social expenditures %/GDP	8 Net social expenditures %/GDP
Ireland	31,1	32,6	13,4	3,8	8,6	50	19,6	17,1
Portugal	34,5	44,3	20,3	3,8	16,8	84		
Spain	35,2	39,8	17,4	3,2	11,9	51		
Great Britain	37,4	36,9	18,8	1,2	8,1	84	23,8	21,6
Greece	37,8	48,3	15,4	4,1	12,0	47		
Germany	37,9	48,4	19,0	1,9	9,6	54	29,2	27,0
The Netherlands	41,4	45,4	22,7	3,2	11,9	47		
Luxembourg	41,7	40,3	16,2	4,0	10,8	63		
Italy	42,0	46,9	18,2	2,4	12,5	60	29,4	24,1
Austria	43,7	52,8	19,4	1,7	12,1	71	28,5	23,4
France	45,3	52,9	23,3	3,0	16,1	98		
Belgium	45,6	49,5	21,2	1,8	12,9	69	30,4	26,3
FINLAND	**46,8**	**48,6**	**20,6**	**2,6**	**15,6**	**108**	**33,3**	**24,8**
Denmark	48,8	54,1	25,1	1,7	19,0	152	35,9	26,7
Sweden	54,2	57,7	26,2	2,5	19,0	150	35,7	28,5
EU-15	41,6	46,4	19,9	2,3	13,1	74		

Sources:
Col. 1: OECD Revenue Statistics, table A
Col. 2-4: European Commission / Statistical Annex of European Economy / Spring 2002
Col. 5: OECD National Accounts of OECD Countries Volume II (2002), tables 1 & 12
Col. 6: OECD, OLIS-database
Col. 7-8: DAFFE/CFA/WP2 (2001) 11

MEASURING TAX REVENUE AND SOCIAL EXPENDITURE:
A MORE COMPREHENSIVE PERSPECTIVE

Willem Adema and Maxime Ladaique
OECD, Paris[1]

Abstract

The Tax-to-GDP ratio is the main indicator used to measure the overall tax burden. However, this indicator has certain limitations as a comparative measure of the tax burden and the role of government across countries and over time. To a certain extent, these issues relate to tax expenditures towards social objectives and the extent to which social transfers and ensuing consumption are subject to taxation.

This paper addresses these issues, and provides a framework for considering net (after tax) social spending on a cross-country basis. The analysis also accounts for private social benefits to facilitate considering what part of an economy's domestic production recipients of social benefits draw on: net total social expenditure.

The analysis is based on the latest available detailed tax information that is required for this exercise and concerns 1999 data for Austria, the Netherlands, Sweden, the United Kingdom and the United States. In all, the adjustments indicate that net social expenditure levels are more similar across countries than gross (before tax) spending indicators lead us to believe.

Keywords/JEL codes: Taxation, Subsidies, and Revenue (H2), Government expenditures and Welfare programmes (H53)

[1] The authors work in the OECD Social Policy Division. The views expressed in this paper cannot be attributed to the OECD or its Member governments: as with any remaining errors, they are the responsibility of the authors alone.

MEASURING TAX REVENUE AND SOCIAL EXPENDITURE: A MORE COMPREHENSIVE PERSPECTIVE

1. Introduction

Tax-to-GDP ratios and public expenditure to GDP ratios give a seemingly clear indication of the tax burden and the size of public budgets. However, there are different reasons why both Tax-to-GDP ratios and public spending ratios need to be interpreted carefully in a cross-country context. Apart from anything else, the interpretation of Tax-to-GDP ratios and public spending to GDP ratios is complicated by two features that are directly related to the cross country differences in which government pursue their social policy objectives. First, there are considerable differences in the extent to which countries tax social cash transfers and the ensuing consumption. Second, tax expenditures, including those with a social purpose, differ across countries in terms of importance.

This paper discusses how tax systems affect the international comparison of public social expenditure totals and thus Tax-to-GDP ratios and public spending to GDP ratios. Section 2 describes the size of public intervention in terms of tax burdens and spending ratios, discusses the caveats that need to be accounted for when interpreting Tax-to-GDP ratios, and provides a concise overview of what public social expenditure involves. Section 3 demonstrates that tax systems have a significant impact on the "real" value public social spending, as some governments "claw back" significant parts of social spending through direct and indirect taxation. On the other hand, some governments use the tax system to provide their citizens with direct social support, and/or fiscally stimulate employers, non-profit non-government organizations (NGOs) and/or individuals to arrange private social protection. To complete the picture on social spending, section 4 briefly describes how (by means of fiscal stimulation and direct regulation), total social expenditure is often larger than what public accounts suggest. The paper thus concludes (section 5) that capturing both the impact tax systems have on the net value of transfer spending and the prevalence private social benefits lead to a more comprehensive view of social effort across countries.

2. Taxation and spending

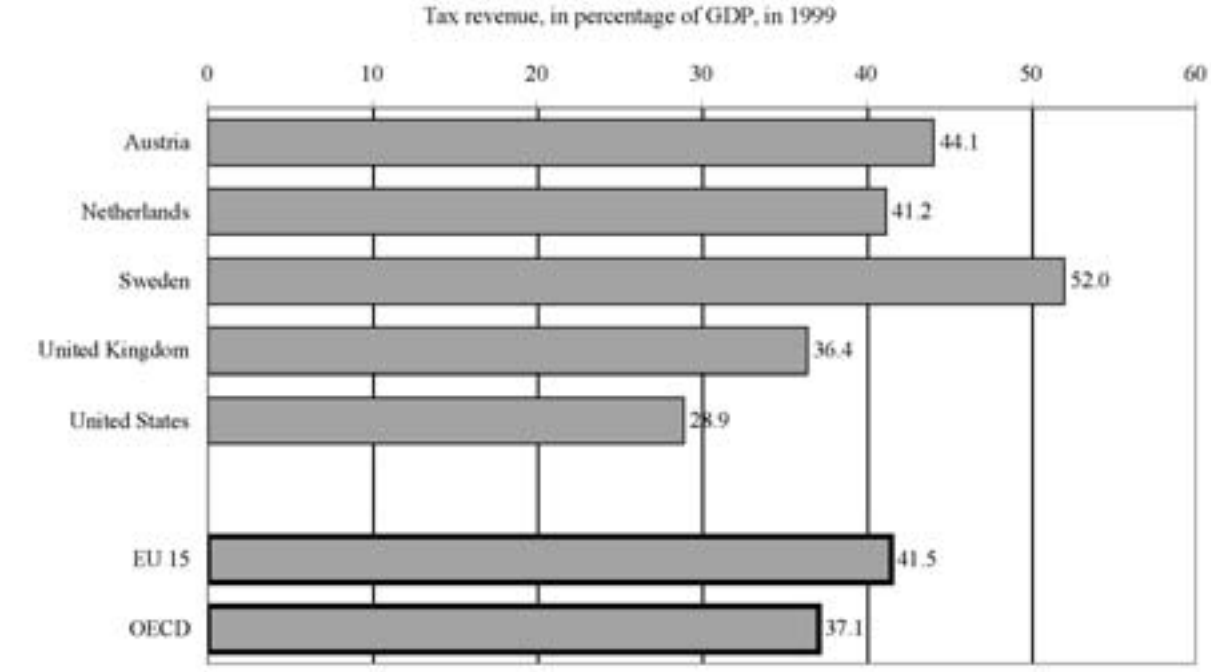
The tax-to-GDP ratio, showing the share of total tax revenues in GDP, is the main aggregate indicator used to measure the overall tax burden (OECD, 2002). Chart 1 shows that Tax-to-GDP ratios vary considerably from less than 30% in the US to over 50% in Sweden, while the (unweighted) average for OECD countries is just over 37%.[2] Across countries, tax revenues are mainly personal and corporate income tax, taxes on consumption (goods and services) and social security contributions paid to general government.[3]

Chart 2 shows that the cross-country differences with regard to Tax-to-GDP ratios are mirrored in public spending ratios, although levels differ, largely because of non-tax government income (e.g. selling stakes in national Telecom companies, utility companies, etc.) and government interest payments. Accounting for this, Tax-to-GDP ratios are by and large mirrored in public spending to GDP ratios.

[2]. Detailed information that is required to estimate the impact of taxation on cash benefits becomes available about 2 to 3 years upon closure of the relevant fiscal year. Since the recent information on net social expenditure concerns 1999, the Tables and Charts presented in this paper concern that year. The OECD is in the process of collecting information on net social expenditure for all OECD countries, and intends to release updated material during the second part of 2004.

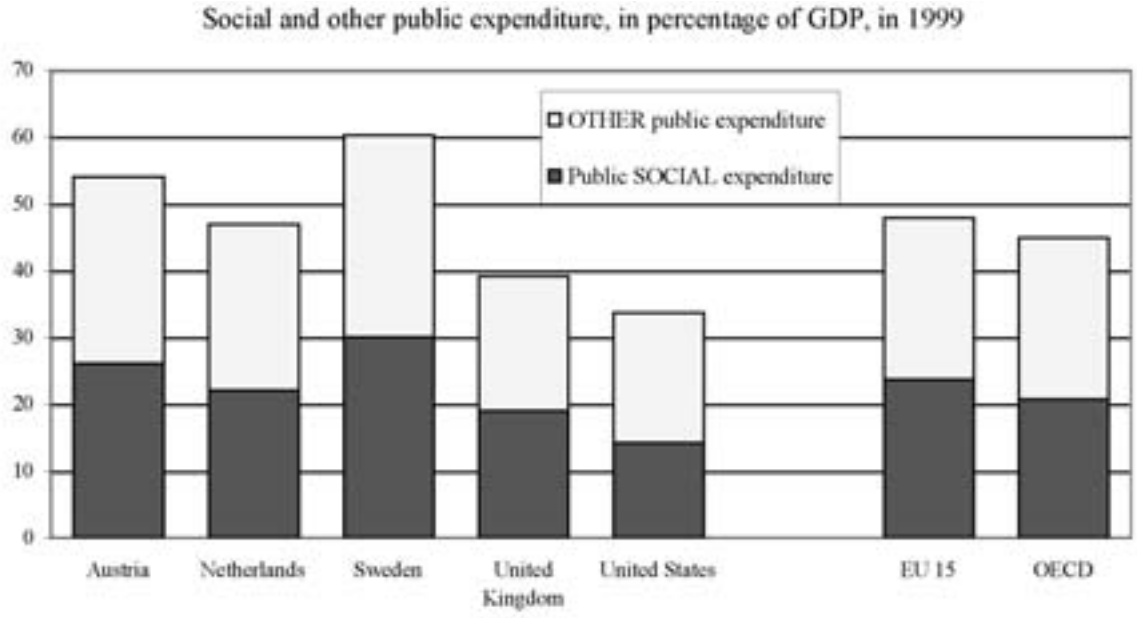
[3]. The OECD classification groups taxes along the following lines (1) Taxes on income, profits and capital gains; (2) social security contributions; (3) Taxes on payroll and workforce; (4) Taxes on property; (5) Taxes on goods and services; and (6) other taxes (see OECD, 2002).

Chart 1. Total taxes account for 30% to 50% of GDP



Source: OECD (2002), Revenue Statistics.

Chart 2. Social spending accounts for almost half of total public spending



Sources: OECD (2003) Economic Outlook, Analytical database;
OECD (2004, forthcoming) Social expenditure database (www.oecd.org/els/social/expenditure).

Public outlays vary considerably across OECD countries. In 1999, public spending ranged from about 34% of GDP in the US to 60% in Sweden. In general, public spending is higher in EU countries than in non-EU OECD Member states. Chart 2 also shows that public social spending constitutes a large share of all public spending: in all countries budgetary allocations with a social purpose constitute around half of public spending.

As social spending is such a large part of public spending, a good understanding of social expenditure is crucial to an understanding of public expenditure and tax revenue indicators. Differences in the delivery and redistributional nature of public social expenditure (reliance on insurance principles vis-à-vis means testing), also contribute to differences in public spending to GDP ratios (Adema, 2001). Also, demographic and labour mar-

ket developments not only affect public spending on retirement, health and unemployment support, but tax revenue as well.

2.1 The interpretation of Tax-to-GDP ratios

The Tax-to-GDP ratio is often used as an indicator of the tax burden. However, there are a number of different reasons why caution should be practiced when interpreting levels and trends in Tax-to-GDP ratios (and public expenditure to GDP ratios) in a cross-national context. These include:

1. The extent to which countries provide social or economic assistance via tax expenditures, rather than direct government spending. This is easily illustrated with an example. Suppose Country A has a tax-to-GDP ratio of 40%, while for County B a Tax-to-GDP ratio of 35% is recorded. Assume furthermore, that country A stimulates private investment and private social support with direct subsidies worth 5% of GDP (financed through taxation), while country B uses tax expenditures of equivalent value for that purpose. In both cases private investors and those who arrange private social protection (often employers, see below) receive the same amount of public support, but that cannot be discerned by comparing Tax-to-GDP ratios of Countries A and B.[4]
2. The notion of tax expenditures is now well established – expenditures made through the tax system. Such expenditures may be an alternative to transfer payments or subsidies, e.g. to stimulate take-up of private health insurance or stimulate investment in housing. However, definitions of what constitutes a "tax expenditure" vary across countries (OECD, 1996). Tax expenditures can take different forms: exemptions (income excluded from the tax base); allowances (amounts deducted from gross income), credits (amounts deducted from tax liability), rate reliefs (tax rate reduction for specific groups, e.g. senior citizens); and, tax deferrals. Crucially, there is no international agreement on what constitutes a "benchmark" tax system – used to identify tax expenditures. Across countries, the benchmarks (the "normal" structure of the tax) against which tax expenditures are being measured vary considerably.
3. The tax treatment of social security benefits also influences overall tax-to-GDP ratios, as well as public social spending to GDP ratios. Many countries exempt social security benefits from taxation, while other countries tax (most) benefit income as any other income. To illustrate this, consider Country A that has a Tax-to-GDP ratio of 35% and exempts benefit income from taxation. Further consider, country B with a Tax-to-GDP ratio of 40% which taxes benefit income, with a worth of, say, 5% of GDP (this amount flows back into the coffers of the Treasury of country B). It thus, appears that the "real" tax burden in both countries is much closer than suggested by the Tax-To-GDP ratios.

In addition to these considerations there are other conceptual and measurement issues that affect the interpretation of Tax-to-GDP ratios across countries: the size of the informal economy across countries (that also affect the size of national economies as measured by GDP); the stage of the economic cycle across countries; the prevailing tax unit – individual vis-à-vis family based taxation; and, the tax treatment of pensions, see OECD, 1996 and 1999 and Adema, *et al.,* 1996). For the purposes of this paper, a lengthy discussion of these issues is not necessary, but it is clear that for individual countries reported tax expenditure totals are not directly comparable, and it is thus difficult to "adjust" Tax-to-GDP ratios on a comprehensive basis. However, that does not rule out a comparison of a more narrow group of "tax expenditures" – such as those related to social protection systems. By and large, this approach measures the amount clawed back in taxation over cash transfers, and direct support provided through the tax system, for which reference to a "benchmark" tax system is not required.

2.2 A closer look at social spending

Before discussing the impact of taxation on social expenditure, it is appropriate to give a concise description of what establishes social protection. The OECD defines social expenditures as (OECD, 2001):

The provision by public and private institutions of benefits to, and financial contributions targeted at, households and individuals in order to provide support during circumstances which adversely affect their welfare. Provided that the provision of the benefits and financial contributions constitutes neither a direct payment for a particular good or service nor an individual contract or transfer. Such benefits can be cash transfers, or can

[4]. The choice for tax expenditures over direct expenditures may also imply different beneficiaries and distributional outcomes, even if aggregate outlays are the same.

be the direct (in-kind) provision of goods and services. Since only benefits provided by institutions are included, transfers between households - albeit of a social nature, are not.

Social benefits include cash benefits (e.g. unemployment benefit), social services (e.g. daycare subsidies) and tax breaks with a social purpose, e.g. tax expenditures towards families with children (see below).

Thus, two main criteria have to be simultaneously satisfied for some expenditure item to be classified as "social". First, the benefits have to be intended to address one or more social purposes. Second, in order to be considered social, programmes regulating the provision of benefits have to involve: a) inter-personal redistribution; and/or b) compulsory participation.

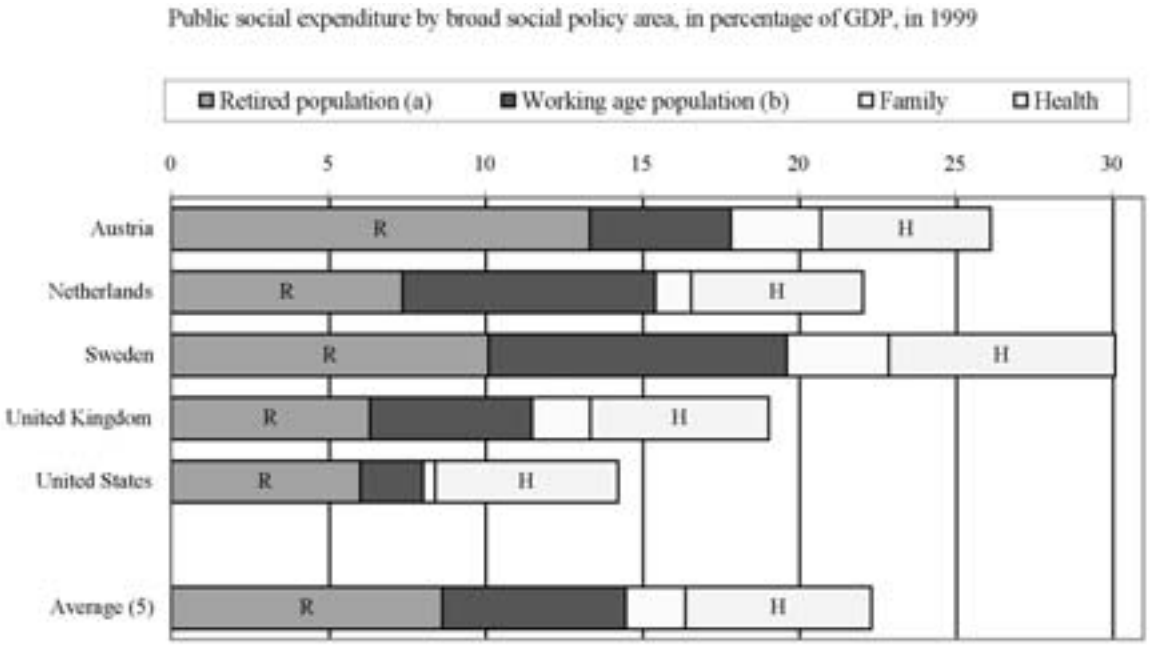
The purpose of the benefits is one factor in the delineation of what is social and what not. The OECD Social Expenditure Database groups benefits with a social purpose in 9 policy areas: old-age, survivors, incapacity related, health, family, active labour market policies, unemployment compensation, housing and other contingencies, e.g., cash benefits to those on low income (OECD, 2004, *forthcoming*). Thus, for example, public support to general savings programmes is not considered social. Similarly, fiscal support towards children is considered social, whereas favourable tax-treatment because of marital status is not. In most OECD countries, public benefits cover most, if not all, of the aforementioned policy areas.

Benefits are "social" if entitlement to receive benefits with a social purpose is the result of direct market transactions by individuals given their individual risk profiles, or in other words, if programme rules involve the inter-personal redistribution of resources among programme participants. Public benefits with a social purpose practically always involve redistribution across households, as they are either financed through general taxation or compulsory social security contributions, leading to the redistribution of resources across the population or within population groups (e.g. all adherents to an unemployment insurance fund). Individual pensions plans, taken out at prevailing market prices not subject to compulsion or redistribution (e.g. without fiscal support), are not considered social (see section 4).

2.3 Public social expenditure

Social benefits are considered public when general government (that is central, state, and local governments, including social security funds) controls relevant financial flows. Sickness benefits financed by compulsory employer and employee contributions to social insurance funds (receipts) are by convention considered public. All so-

Chart 3. Austrian pensioner welfare state…



a) Old age and survivors benefits.
b) Incapacity related benefits, labour market programs, unemployment, housing and other.
Source: OECD (2004, forthcoming) Social expenditure database (www.oecd.org/els/social/expenditure).

cial benefits not provided by general government are within the private domain. Thus, sickness payments paid directly by employers to their employees, for example, are considered private social expenditures (see section 4).

There is considerable cross-country variation in the focus of gross *(before tax)* public social spending (OECD, 2004, *forthcoming*). For example, Austria might be regarded as a "pensioner state" as public spending towards those in retirement was 14% of GDP in 1999: the other governments spent about 7 to 8% of GDP on support for those in retirement (OECD, 2002). Public spending on health is an important budget item in all OECD countries, and amounted to 6 to 7% of GDP in the five countries considered here (OECD, 2003). Sweden and the Netherlands spend fare more than the other countries on income support to the working age population (e.g. unemployment, disability and family cash benefits), while public spending on family benefits is highest in Austria and Sweden.

3. The impact of tax systems on public social spending

Tax systems can significantly affect the degree to which expenditure budgets reflect true public social effort. Building on the discussion in the section on the interpretation of Tax-to-GDP ratios, there are three fiscal items that have to be accounted for to obtain a more comprehensive picture of public social expenditure within and across countries:

1. *Direct taxation of benefit income*: Governments can levy income tax and social security contributions on cash transfers to beneficiaries, and thus directly claw-back a part of the income transfer they awarded.
2. *Indirect taxation of consumption by benefit-recipients*: Benefit recipients generally use benefit income to finance consumption of goods and services, and these indirect taxes flow back into the Exchequer. Similar to direct taxation, differences in indirect taxation across countries have implications for social support received by households.
3. *Tax breaks for social purposes*: Governments also make use of the tax system to directly pursue social policy goals. Fiscal measures with social effects are those which can be seen as replacing cash benefits (e.g. child tax allowances) or stimulating the provision of private benefits (e.g. tax advantages for the provision of private child-care facilities). Such tax-advantages can be given to households, employers and private (pension) funds.

The following three sub-sections will show that there are considerable cross-country differences in the importance of each of these three features.

3.1 Direct taxation and social security contributions on transfers

As outlined above, "tax expenditures" include reduced taxation on particular sources of income or types of household. For example, old age pensions could be taxed at a zero or reduced rate which would lead to "revenue foregone" of a specific value. In some OECD countries almost all benefits are paid net of tax; in others they are taxed in the same way as income from work. In countries where governments levy direct income tax and social security contributions on cash transfers to beneficiaries, public social effort and redistribution of resources is lower than suggested by gross spending indicators. For example, in Austria the recipient of an unemployment benefit whose last earnings were those of an average production employee who lived in a "two-adult one-earner" family with two children received the equivalent of $16 376 in 1999, on which he or she did not pay tax. By contrast, a similar person in Sweden received annual unemployment benefits of $21 194 but paid $5 835 in income taxes and social-security contributions, so that net benefit income was $15 359 (OECD, 2002*b*). Thus, in this example (the situation for single persons is different) the net unemployment payment in Sweden is actually lower than in Austria, while gross payments suggest otherwise. In aggregate spending terms, this means that countries that tax transfer income rather heavily divert a significant part of transferred income to flow back into the coffers of the Treasury. As a result, net *(after tax)* public spending on unemployment benefits is about 65% of the level suggested by gross indicators in Sweden.

There are two ways to adjust gross spending items (e.g. spending on unemployment compensation or old age cash benefits) for the impact of direct taxation.[5] Sometimes, national sources provide concrete information on

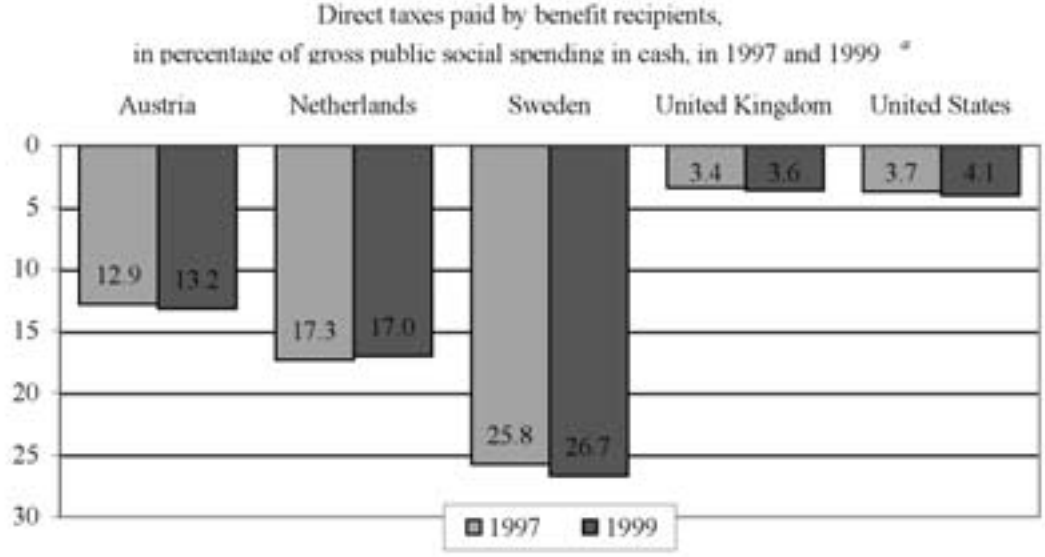
[5]. These three fiscal adjustments adjustments discussed below measure "first round effects" concerning the net value of benefits. Hence, direct taxation of the earnings of those who provide services (e.g. staff in hospitals or childcare centres) is not included in the calculations. Finally, adjustments for direct and indirect taxation of benefits do not concern service spending (including health). The value of social services remains unaltered by the calculations.

the value of tax paid on a particular (set of) benefit(s). Such information is the most reliable source, and concerns data by tax offices (or social insurance funds for social security contributions) or sufficiently detailed information published by national statistical offices. In the case of Austria, information on the taxation of old age, disability and survivor pensions was taken from income and earnings statistics as published by Statistics Austria (Statistik Österreich, 2000). The Internal Revenue Service publishes a comprehensive set of information on direct taxation of personal income for the United States (IRS, 2003).

In the absence of administrative data, "microsimulation-models" and micro data sets which contain detailed information on both the incomes received by households and their taxation were used to generate Average itemised tax rates, e.g. the average tax rate on public pension income. Such techniques underlie the estimates on direct taxation of benefits in the Netherlands, Sweden and the UK.[6]

Applying the Average Itemised Tax Rates on gross spending totals, lead to results that clearly show that there are large differences in levels of direct taxes and social security contributions paid by recipients of social benefits across countries (Chart 4). Direct taxation paid by benefit-recipients amounted to almost 27% of gross public spending on cash transfers in Sweden in 1999 (with spending on services - health, family services, etc., assumed not to be subject to taxation), but only around 4% in the UK and the US. [7]

Chart 4. Limited "clawback" of transfer income in the UK and the US



a) For Austria, 1998 direct tax rates were applied to 1999 gross social spending in cash.
Sources: Calculations by Authors and Adema (2001).

3.2. Indirect taxes on consumption out of benefit income.

Recipients of social benefits generally use their benefit income to finance consumption of goods and services such as housing, food, clothing and so on. For example, in Austria in 1999, duties on tobacco amounted to about $1.2 billion – (OECD, 2002), part of which was paid by benefit recipients. Thus, consumption taxes reduce the real value of consumption which can be financed out of a given level of benefits, and also establish another flow of back in tax receipts to the Exchequer. For example, in order to provide benefit recipients with a net income of 100 units, a country like the US with an average indirect tax rate of slightly over 5% needs to pay a gross benefit of about 106 units. In EU-countries, where the average indirect tax rate is around 20% a gross

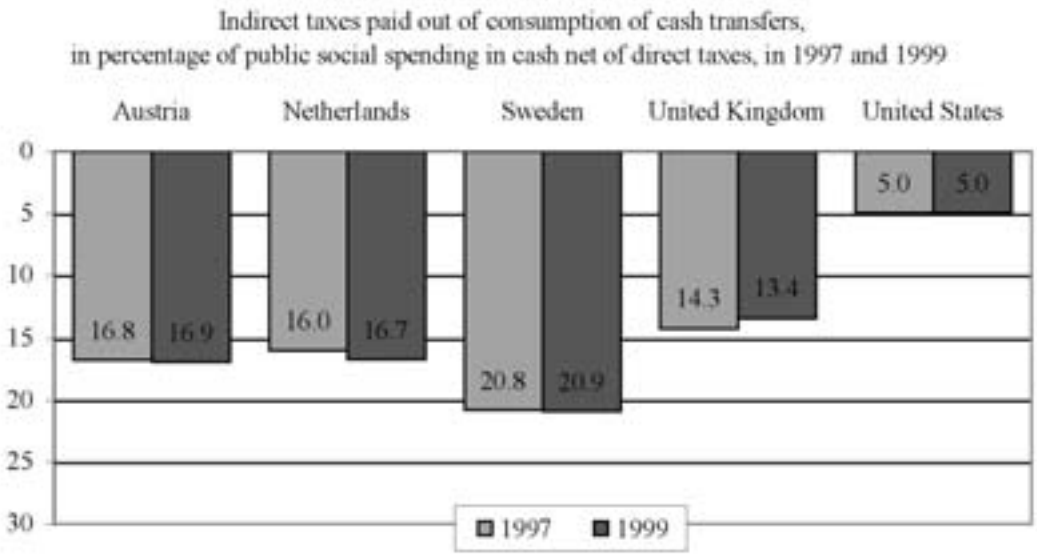
[6]. Microsimulation techniques generate reliable estimates, but do require assumptions on the way income is allocated. For example, if transfer income is the only income received, the average tax rate on this income can be used to calculate net transfer income. However, the calculation of direct taxation of benefit income is more complicated when different types of income are involved; people who receive either different benefits during a year, or whose annual income is a combination of earnings with, say, unemployment benefit. In this case it is necessary to allocate taxes paid to the various income-components. It is assumed that the tax due is divided over the different income components according to the weight of each type of income. Hence, if benefits provide 75% of annual income and earnings 25%, 75% of total tax is assumed to be paid on benefit income.

[7]. The aggregate indicator on direct taxation over benefits masks considerable variation in the way in which different benefits are taxed. Means-tested benefits are often not taxable, while sickness benefits are often taxed as work-income. In general, countries do not tax family cash benefits.

payment would have to be around 125 units to have an equivalent net value. Thus, gross spending totals in the US can be somewhat lower than in EU-countries while generating a similar net value for benefit-recipients.

To account for the impact of indirect taxation, an average implicit indirect tax rate was calculated on basis of aggregate data available for all countries from National Accounts and the *OECD Revenue Statistics*.[8] The average implicit indirect tax rate is the ratio of revenue from general consumption taxes and excise to private consumption and government consumption minus government wages. Chart 5 shows that the implicit average tax rate is significantly lower in the US (5%) than in European countries (around 16%), and to a larger extent than Sweden (almost 21%).

Chart 5. Low indirect tax rates in the US



Sources: Calculations by Authors and Adema (2001).

3.3 Tax breaks for social purposes.

Apart from the variation in direct taxation, the notion of "tax expenditures" encompasses another group of fiscal policy measures that Governments use to pursue social policy objectives. These so-called "tax breaks for social purposes" (TBSPs) are defined as:

"those reductions, exemptions, deductions or postponements of taxes, which: a) perform the same policy function as transfer payments which, if they existed, would be classified as social expenditures (e.g, fiscal support for families with children); or b) are aimed at stimulating private provision of benefits (e.g. tax advantages towards private health insurance)".

Tax breaks which mirror the effect of cash benefits can be substantial. For example, the value of that part of the Work and Family Tax credit in the UK which was off-set against tax liabilities amounted to $2.1 billion in 1999. The "Earned Income Tax Credit" (EITC) in the United States similarly illustrates the relationship between direct cash transfers and tax breaks for social purposes. In 1999, the cost of this programme amounted to almost $30.6 billion, of which $4.8 billion in the form of tax credits — and thus regarded as a fiscal measure that mirrors a cash benefit, while $25.8 billion concerned tax credits exceeding tax liabilities of recipients. The latter amount concerns direct transfer payments from the government to the recipient and, as such, are considered as (untaxed) direct social expenditures and recorded as cash benefits in the OECD *Social Expenditure Database*.[9]

[8]. This simple approach, while approximate, is clear and transparent. Ideally, however, the calculation method would allow for different spending patterns between income groups by using data sets on household expenditure patterns. Although, such surveys theoretically facilitate the calculation of implicit indirect tax rates by group of beneficiaries, such datasets are not readily available for all countries. And if they are, they suggest tax payments that are well below actual tax receipts (Adema, *et al.*, 1996).

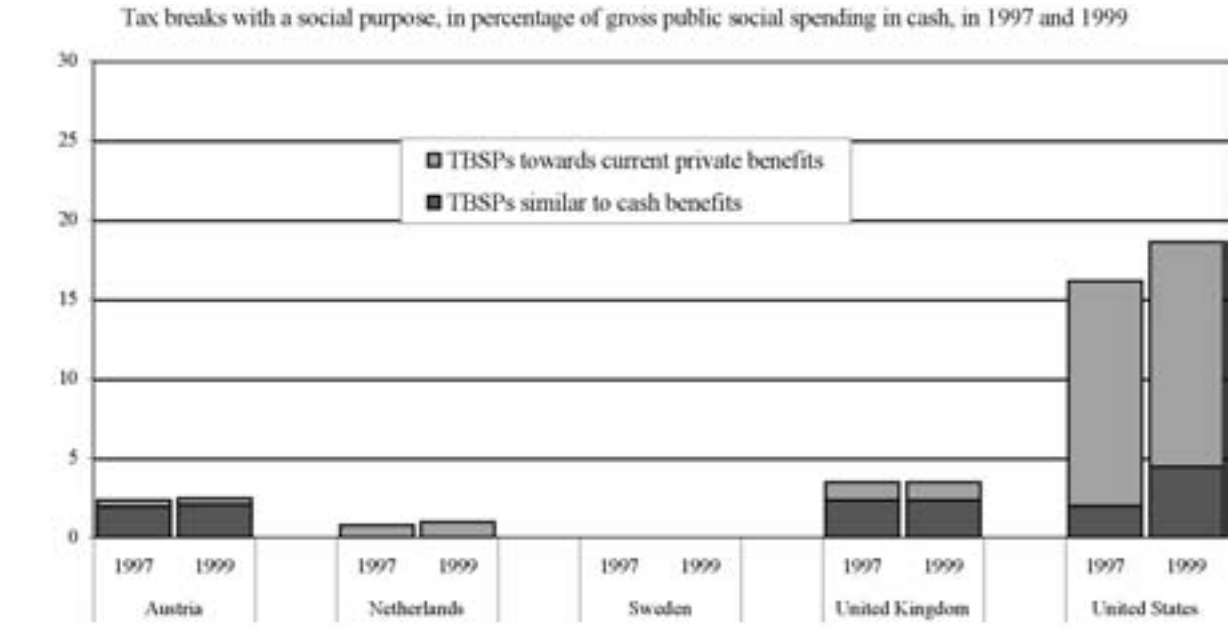
[9]. The presence of dependent children leads to eligibility to cash benefits in social protection systems, whereas a marriage contract does not. Hence, TBSPs that mirror cash benefits include the value of tax advantages towards the presence of dependent children. But, tax advantages for married people are not considered to serve a "social purpose", and are therefore not included in the calculations (regardless of whether or not such measures are part of the basic tax structure).

For the same reason, Child benefits paid out by tax authorities in Austria are also included in the *OECD Social Expenditure Database*.

Apart from the TBSPs that are similar to cash payments, Governments also use fiscal measures to stimulate *take-up of private social protection*, and in this area too, there are considerable differences across countries. Tax breaks towards "current" private social benefits[10], i.e. at the provision of private social benefits in the current year such as voluntary private unemployment or health insurance, or benefits provided by NGOs, are particularly important in the US (Chart 6). The net value of TBSPs in the US is about 1.2% of GDP, and concerns health-related tax relief (about 0.8% of GDP), the EITC and various smaller items, including donations to NGOs (OFFICE of MANAGEMENT and BUDGET, 2001).[11] Indeed, this form of social provision is generally less important in countries with relatively high direct tax levies such as the Netherlands or Sweden.

However, it is impossible to be precise on the extent to which tax advantages are instrumental in stimulating private coverage or mainly serve to finance expensive private systems whose degree of efficiency is debatable - as, for example, private health insurance in the US. Tax breaks certainly affect individual behaviour, but whether they induce much additional saving on a national basis is a matter of debate. For example, in the late 1980s individual retirement accounts were introduced in the US. Favourable tax treatment towards this programme certainly increased its popularity, but induced little new pension savings, as in 1990 82% of all programme contributions were "rollover contributions" from other employment-based plans (Adema and Einerhand, 1998).

Chart 6. A high value of TBSPs in the US, while they are virtually non-existent in Sweden



Sources: Calculations by Authors and Adema (2001).

3.4 Net public social expenditure across countries

The information on gross benefit spending, tax levied on cash transfer and ensuing consumption and tax breaks with a social purpose can be pulled together so to derive net social expenditure indicators. Adema (2001) contains a detailed discussion of that framework which is presented below (Table 1).

[10]. The notion of TBSPs to stimulate private benefits also includes TBSPs towards pensions. These are not considered here, because of practical difficulties in getting an internationally comparable data-set (Adema, *et. al*, 1996). Available information suggests, however, that the value of favourable tax-treatment of private pension arrangements can be considerable. For example, in the United Kingdom favourable tax treatment pensions was worth about 2.8% of GDP in 1999 (Inland Revenue, 1999).

[11]. Information on the revenue foregone through tax breaks with a social purpose can often be found in so-called "Tax Expenditure Statements" as published by national authorities (for Austria, for example, see Bundesministerium für Finanzen, 2001).

First of all, to get from gross to net public social expenditure the value of direct taxes and the imputed value of indirect taxation on goods consumed out of public benefits that is clawed back by the government has to be subtracted from gross public social expenditure (lines 1, 2 and 3). Subsequently, the net value of TBSPs that mirror cash benefits (over which indirect taxation is due, line 4) and the value of TBSPs towards current private benefits (line 5) are added to obtain net (after tax) public social expenditure (line 6). Net public social spending gives a comprehensive impression of all budgetary efforts in the social field and the proportion of net social output re-allocated to benefit recipients.

Gross public social expenditure indicators led us to believe that public social effort is much higher in Austria, the Netherlands and Sweden than in the UK and the US (Chart 3, above). However, governments in the first three countries claw back considerably more money through direct and indirect taxation of public transfer income than the value of the tax advantages they award for social purposes. Thus, net public social expenditure in Austria, the Netherlands and Sweden is far less than gross spending indicators suggested (around 5 to 8 percentage points of GDP at factor costs, see table 1). On the other hand, in the UK and the US direct and indirect taxation of cash transfers is far less important. Table 1 shows that Sweden is still the biggest public social spender, but differences in spending levels between the Netherlands and the UK have disappeared, while in the US net social spending levels are actually higher than gross spending levels.

Table 1. From gross to net public social spending

Different public social expenditure indicators, in percentage of GDP at factor costs [a], in 1999

		AUSTRIA	NETHERLANDS	SWEDEN	UNITED KINGDOM	UNITED STATES
1	**Gross public social expenditure**	**30.0%**	**24.9%**	**36.7%**	**22.4%**	**15.2%**
	- Direct taxes and social contributions	2.9%	2.7%	5.0%	0.5%	0.3%
2	Net cash direct public social expenditure	27.1%	22.1%	31.7%	21.8%	14.8%
	- Indirect taxes	3.2%	2.3%	2.9%	1.8%	0.4%
3	Net direct public social expenditure	23.9%	19.9%	28.8%	20.0%	14.4%
T1	+ TBSPs similar to cash benefits	0.5%	0.0%	0.0%	0.3%	0.4%
	- Indirect taxes	0.1%	0.0%	0.0%	0.0%	0.0%
4	Net TBSPs similar to cash benefits	0.4%	0.0%	0.0%	0.3%	0.3%
T2	TBSPs towards current private benefits	0.1%	0.2%	0.0%	0.2%	1.2%
5	+ Net TBSPs (not including pensions)	0.5%	0.2%	0.0%	0.4%	1.5%
6	**Net public social expenditure**	**24.4%**	**20.0%**	**28.8%**	**20.5%**	**15.9%**

a) Finally, the Net social spending indicators are related to GDP at factor cost rather than GDP at market prices – the most frequently used indicator on the size of an economy. The reason for this is that, since adjustment has been made to benefits for the value of indirect taxation, the denominator (GDP) has to be adjusted similarly. As GDP at factor cost does not include the value of indirect taxation and government subsidies to private enterprises and public corporations, it seems the most appropriate indicator for international comparisons.

Sources: Calculations by Authors and Adema (2001).

4. Private social expenditure

General government is not the only entity that provides social support. Family and community networks are often crucial in providing support, but as transfers between individuals are not recorded in the National Accounts, these are not considered here. However, private institutions as employers, NGOs, and/or insurance funds also play an important role. Benefits provided/paid out by these entities are considered private social expenditure, and the definitional distinction between public and private is on basis of whoever controls the relevant financial flows; public institutions or private bodies.

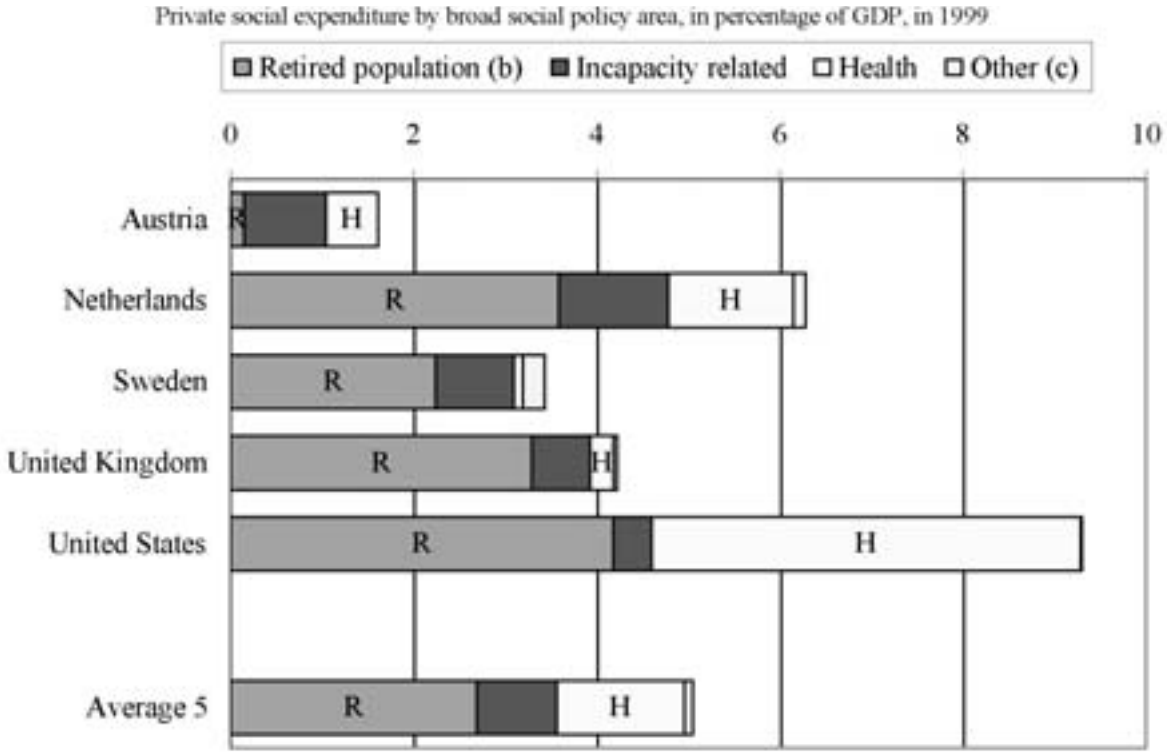
As with public intervention, support is only considered social if it serves a social purpose, involves interpersonal redistribution or when participation in a private plan is mandatory (see section 2.2). Rather than direct payments, governments sometimes mandate - force by legislation, employers to provide benefits to their em-

ployees, or mandate individual and/or employers to make contributions to private funds from which benefits accrue. Alternatively, private benefits with a social purpose (e.g. sickness, health or pension plans) are instituted by employers on a voluntary basis or derive from collective agreements), and often such plans are tax advantaged. In all these cases there is an element or inter-personal redistribution, and hence these plans are considered social.

By contrast, take-up of individual insurance, even with a social purpose, is a matter for the persons concerned, and premiums are based on the individual preferences and the individual "risk profile". For example, if someone takes out private pension insurance which is "actuarially fair", then there is no necessary redistribution across households. The insurance company decides the price so that the individual can expect to receive back in compensation payments exactly what it costs him or her. This type of expenditure is considered "exclusively private" and not social. If, on the other hand, the government subsidises the insurance payment (e.g. through favourable tax treatment of individual pension plans) or subsidises sick people via risk-sharing (e.g. through forcing insurance companies to have one price for both sick and healthy people) then there is redistribution between households, and the expenditure item is considered social.

In practice, private social benefits mainly concern pension plans that provide income in retirement or to survivors and incapacity–related payments. In some countries, notably the US, private health benefits also play an important role. Private social benefits are largest in the US (Chart 7) and this is not entirely unrelated to the

Chart 7. From 1.6% of GDP in Austria to almost 10% of GDP in the US on private social spending



a) Available information on private social expenditure is generally considered to be of lesser quality than information on public spending. That is no surprise given the voluntary nature of many benefits. In the absence of compulsion, there are often no strong incentives for institutions that provide voluntary social benefits to report relevant information to a central authority. National Statistical Offices often obtain information on pension spending from organisations that supervise or represent pension funds. Fiscal authorities may also have a good view on tax-related spending, as in order to qualify for tax advantages individuals, employers, and private (pension) funds have to report their expenses. However, detailed information held by tax authorities often concerns contributions to pension plans, rather than payments -- which are often grouped under income without detail on the (underlying pension) plan.

b) Old age and survivors benefits.
c) Family, labour market programs, unemployment, housing and other.

Source: OECD (2004, forthcoming) Social expenditure database (www.oecd.org/els/social/expenditure).

considerable value of TBSP towards current private programmes (Chart 6). Indeed, private social health spending in the US accounts for 4.7% of GDP (about two-thirds of all private health spending in the US). Pension benefits also constitute a major component of voluntary private social benefits, especially, in the UK (3.3% of GDP), the Netherlands (3.6% of GDP) and the US (4.2% of GDP).

Similar to public cash transfers, private social benefits are also subject to direct and indirect taxation. In general, private pensions and incapacity-related employer payments are taxed much more in line with work income (although age-allowances exits for pensioners), and the burden of taxation is thus relatively large compared to public welfare payments. The tax to gross private social cash benefit spending ratio exceeds 30% in Austria, Sweden and the Netherlands, and while considerable lower in the UK (22%) and the US (10%), it is well above average direct taxation of public cash transfers.

4.1 Total social expenditure

Considering both net *(after tax)* public and private social benefits leads to an identification of that proportion of an economy's domestic production to which recipients of social benefits lay claim. Building on the framework as in Section 3.2.4, including private social benefits, accounting for taxation, and avoiding potential double counting regarding TBSPs towards current private benefits (see notes to Table 2), leads to an indicator of net total social expenditure. Among the countries presented here, net total social expenditure is highest in Sweden at 31% of GDP at factor cost. Most remarkable is that net total social expenditure to GDP ratios are rather similar in Austria, the Netherlands, the UK and the US at around a quarter of GDP at factor costs. This is largely related to the importance of private, mainly voluntary, social benefits in the last three countries, especially in the US.

Table 2. Similar total net social expenditure in Austria, the Netherlands, the UK and the US

From gross public to net total social spending, in percentage of GDP at factor costs, in 1999

	AUSTRIA	NETHERLANDS	SWEDEN	UNITED KINGDOM	UNITED STATES
1 **Gross public social expenditure**	**30.0%**	**24.9%**	**36.7%**	**22.4%**	**15.2%**
...					
6 **Net public social expenditure**	**24.4%**	**20.0%**	**28.8%**	**20.5%**	**15.9%**
7 **Gross private social expenditure**	**1.9%**	**7.1%**	**4.2%**	**5.0%**	**9.9%**
- Direct taxes and social contributions	0.3%	1.1%	0.9%	0.5%	0.5%
8 Net cash direct private social expenditure	1.5%	6.0%	3.3%	4.5%	9.4%
- Indirect taxes	0.3%	1.0%	0.7%	0.6%	0.5%
9 **Net private social expenditure**	**1.3%**	**5.0%**	**2.6%**	**3.9%**	**8.9%**
10 **Net Total social expenditure** [a] (6 + 9 - T2)	**25.6%**	**24.8%**	**31.4%**	**24.2%**	**23.7%**

a) Tax breaks towards current private social benefits are tantamount to financing private social benefits. Thus, while these TBSPs are clearly a public expenditure item (Table 1), they finance private benefits and simply adding net public social expenditure to net private social expenditure would overestimate the amount of support received by households. Hence, while adding net public and private social benefits (lines 6 and 10 in Table 2), the value of TBSPs to current private social benefits has to be subtracted in order to obtain an indicator on net total social expenditure (5). This indicator quantifies the proportion of an economy's domestic production at the disposal of recipients of social benefits.

Sources: Calculations by Authors and Adema (2001).

5. Conclusion

A comprehensive analysis of social effort requires information on public and private cash-transfers and social services as well as detailed information on the impact of tax systems on social expenditure. Data on gross public social expenditure is available on a comprehensive basis, but information on private social spending is of a lesser quality, while observations on the impact of tax systems at times necessarily rely on estimates, rather than administrative records. The OECD hopes to collect information on net social expenditure indicators for all

OECD countries in 2004, and this process will certainly address existing methodological and measurement issues. However, the limitations of the current estimation techniques do not invalidate the observations on the general impact that tax systems and private social spending have on social effort within and across countries:

Accounting for the impact of the tax system on public social expenditure reduces differences in spending ratios across countries. This is because the claw-back on cash transfers through direct and indirect taxation is considerable in most continental western European countries, while public social expenditure measured before tax underestimates public social effort in the US. Thus, both gross (before tax) public social spending to GDP ratios and tax-to-GDP ratios have to be interpreted very carefully when used to analyse public social spending and/or tax burdens across countries.

Also accounting for the role of private social benefits has an additional equalising impact on social spending to GDP ratios across countries. So much so, that the proportion of an economy's domestic production to which recipients of social benefits lay claim appears rather similar in Austria, the Netherlands, the UK and the US.

The similarity in net total social expenditure to GDP ratios should not be taken to mean that relevant tax/benefit systems are otherwise the same. The re-distributional nature of tax/benefit systems varies hugely across countries. Not least, because tax expenditures often benefit different people than social welfare transfers. Similarly, client-groups of public and private social protection programmes may overlap, but are certainly not the same. Nevertheless, it is clear that net social expenditure to GDP ratios give a relatively comprehensive view of social spending in a cross-national context.

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Does The Size Of The Government Sector Affect Our Ability To Compare National Economies?

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Abstract:

The Stability and Growth Pact is a pre-eminent feature of economic policy within the EU today. Its focus is on the size of government deficits and debt. But at other times, the optimal size of the government sector has been the major subject of debate. Various approaches to measuring the size of the government sector will be examined. The main focus of the paper will be on how government is represented in gross domestic product. GDP is usually portrayed in the press as a reflection of developments in the market sector. But government produces a large part of most countries' output. The current European System of Accounts introduced a measurement process which could ensure comparability between countries irrespective of whether a particular function is produced in the market sector or by the non-market government sector. Does this really work? What are the difficulties? What difference has it made across the EU? The paper examines these issues.

Introduction

In the European Union today, the Stability and Growth Pact is a pre-eminent feature of economic policy. Its main focus is on the size of government deficits and debt. But at other times, the optimal size of the government sector has been a subject of debate in many countries. Is there a correct way to measure the size of the government sector? And does that allow us to make meaningful comparisons between countries? As well as addressing these questions, this paper aims to provide users of statistics with some insights into the structure of the European System of Accounts. The views expressed are those of the author alone.

What is government?

Government is a collection of legal entities, the confines and responsibilities of which are defined in each country – for example in its constitution and national laws. Country by country, there is quite some variation in the responsibilities governments choose to take on; in some cases, they take on responsibilities indirectly through corporations which they own but which are distinct entities, separate from government. Here are some examples. Providing education is something which governments universally do. In healthcare, governments sometimes run almost all the hospitals (e.g. in Sweden); in others, much healthcare provision is carried out by government-owned corporations (e.g. in the U.K.), or is largely left to the market (e.g. in the USA) or the non-profit sector (as is partly the case in Germany). Operating roads and bridges is generally a government responsibility; but there are exceptions - as in France where private companies operate some roads.

Comparing governments on this basis is like comparing apples and pears: it's not surprising that such anarchy does not appeal to the tidy minds of national accountants. In making international comparisons of the size of government, we would much prefer to compare like with like. National accountants have refused to believe that there is economic significance in the unique set of responsibilities which each and every national government has chosen to take on. Instead, we have looked for more meaningful ways to illustrate the structure of economies.

An activity unique to government is producing services which are supplied largely free of charge to users. Governments - and the businesses they own - also produce things which they sell in the market, just like private businesses do. Common examples are the operation of roads, coalmines, electricity generation and telephone ser-

vices. National accountants find it more meaningful to split the economy between market and non-market activities. For us, government is about the production of non-market goods and services – which is not any country's legal definition. The full definition of government from the European System of Accounts is reproduced below[1]. When we compare countries on these definitions, we are comparing activities which have something in common from an economic point of view, i.e. non-market activities. This approach allows us to measure the extent to which governments have chosen to carry out transactions in a non-market framework, such as producing education, healthcare, national defence, administration of justice etc. Some countries are heavily involved and others less so: that is of interest in itself in relation to our goal of measuring the size of government.

Finding a basis for making international comparisons

Even without looking at statistics, we can see that governments feature prominently in national economies almost everywhere. Government in Germany is clearly larger than it is in smaller countries such as Ireland or Denmark. But this is not what most people have in mind when we speak of international comparisons. Making comparisons between countries requires us to find a means of standardising for the size of the country. As GDP has become the standard for measuring the size of national economies, it should therefore be a good starting point for measuring the size of government.

GDP is broadly a measure of what is produced in the economy. Newspaper headlines often focus on the change in the level of GDP, i.e. the rate of economic growth. But those of us who help to produce the national GDP estimates can reveal:

- its many interesting components
- the many ways in which GDP can be analysed, and
- where government features in GDP.

Before we do that, we need to clarify how the government engages in economic activities.

Governments' non-market economic activities

Governments carry out a variety of non-market activities. At the highest level, government has a unique role in running a democratic legislature, providing national security and meeting international obligations imposed on governments. In addition, governments have chosen to intervene in a wide range of areas and, in doing so, they provide a wide range of services within their jurisdictions. Among these services may be the provision of:

- education and healthcare;
- social security;
- a justice system (courts and prisons),
- security (national defence, police, fire services)
- environmental and recreational services.

Some of these activities are only carried out by government - running the justice system and national defence, for example. But, in other cases, government produces services alongside other economic agents – and sometimes even in competition with them. Typical examples of this are education and healthcare. To understand the government's role in GDP, it would be useful to have an overview of how the production of services feature in GDP.

Where does the production of services appear in GDP?

GDP can be arrived at from different starting points. The production of services features prominently in the GDP measures which are derived using the value added and final expenditure approaches.

- The value added approach follows the production process of goods and services. Production takes place inside a "production boundary" within which transactions are between producers, with value being added at

[1] The general government sector includes
- all institutional units which are … non-market producers whose output is intended for individual and collective consumption, and mainly financed by compulsory payments made by units belonging to other sectors
- and / or all institutional units principally engaged in the redistribution of national income and wealth.

Non-market producers are institutional units whose major part of output is provided free or at prices that are not economically significant.
(European System of Accounts, paras 2.68 and 3.26)

each stage. The value added chain ends after the product crosses the production boundary to become final expenditure. Take the packet of paper I buy in a shop. This was transformed into paper as a result of value being added to it at various stages within the production boundary: for instance, in cutting down a tree, transporting it, transforming it at a paper mill, and at the wholesaler and the retailer.
- In the expenditure approach to measuring GDP, the spending of final users is aggregated. This takes place at the point where goods and services flow across the production boundary. As a final user, my purchase of the packet of paper in the shop is final expenditure.

Both these approaches are ways of measuring the same concept: gross domestic product. But they build it up in a different way. This difference allows us to analyse the contribution the various participants make to GDP. Where does government fit in?

- In the value added approach, government performs activities which are towards the end of the production chain: it produces services by employing its own staff and buying in items which have had value added to them by other producers. Their destination is almost invariably final consumers. (Note here that, unlike many market sector producers, government is not generally in the business of producing items which flow in the reverse direction: i.e. to have value added to them by other producers.)
- In the expenditure approach, one of the components of GDP is government final expenditure. This includes the full value of the goods and services produced or bought by government, and its capital expenditure.

Some illustrations

Across the whole economy, GDP is the same whether it is measured by the value added approach or in terms of final expenditure. Government is a prominent component of both approaches. But the size of government is usually different in the value added measure as compared with the final expenditure measure.

Facts:

- In the EU area, government value added in money terms was about 12% of GDP in 2001 but government final expenditure was 22% of GDP.
- UK had the lowest share of government value added in GDP (8%) but its government final expenditure as a share of GDP is 20%.
- France's government value added was the highest at 16% of GDP; but when looked at in terms of the share of government final expenditure in GDP, it was in third place at 26%.
- As regards share of government final expenditure in GDP, Denmark and Sweden came highest (27%) while Greece was lowest at 17%, just below Ireland, Austria, Italy and UK.

Source: Eurostat Datashop

Government value added and government expenditure are therefore two very different approaches to measuring the size of government in the economy. Each places a different country at the top and bottom of the league (as well as in the positions in between).

Case study:

- In the UK, most healthcare services paid for by government were, until recently, bought in – mainly from the public corporations which ran the government's hospitals and other medical facilities. As healthcare accounts for over a quarter of government final expenditure, this contracting arrangement is mainly responsible for the large gap between the UK's government final expenditure (20% of GDP in 2001) and value added by its government (8%).
- The payments for services are part of government final expenditure but most of the value is added outside government, by the providers of healthcare services. Compared with other countries, government in the UK is more important as a purchaser than as a producer.

Source: United Kingdom National Accounts

Government services are composed to a varying extent of those produced by government and those which government pays other businesses to supply. Hence, a high government value added to GDP ratio reflects a tendency for a government to produce these services itself rather than buy them in. A high government final expenditure to GDP ratio is a reflection of relatively high provision of government services per se. There is evidence that, over the past decade, the gap between the two measures has widened as governments have chosen to buy in services which they may previously have produced themselves. This is particularly prominent in the UK hence the wide disparity in the table above. Services which are commonly bought by government from outside providers now include healthcare, prisons, the cleaning and security of government buildings, provision of food services, refuse collection and the provision of office space.

Back to the main question

Which of these measures best describes the size of government in the economy? That depends on whether we want to examine government's role as producer – looking only at the value it adds - or as consumer – in which we take account of what government buys (and mainly hands on to others).

Imperfections of the methods

These two measures of the size of government are easy to produce from the published national accounts data from all EU Member States. They represent snapshots at a point in time. To establish whether they are meaningful, we need to test them against reality. I have devised two tests: if the measures are meaningful, they should be able to pass both:

- Country A and country B both have the same level of GDP. Government final expenditure in 2000 is 30% of GDP, both measured at constant prices. *Does this mean that the position in country A is exactly the same as in country B?*
- Assuming that the answer to the above question is positive, let's consider the position in 2001. The figure goes up in both countries to 35%. *Can we be certain that the position in country A is still the same in every way as in country B?*

These questions address comparability in a fundamental way. We start with the position in 2000. Our methodology does not compare one country with another but compares each country with itself over time. Largely due to the absence of prices for government services, our methods cannot check whether the volume of government final expenditure in one country is the same as in another. If the purchasing power of government final expenditure were, for instance, higher in country A than in country B, a 30% share of their GDP would mask real differences in volume.

If A and B start in exactly the same position in 2000 and we assume that by 2001, government productivity has grown faster in country B than in country A. As a consequence, in 2001, the 35% of GDP represents more government services for country B than for country A.

The two preceding paragraphs illustrate situations which are probably commonplace. We must therefore conclude that although X% of GDP has a meaning in both money terms and at constant prices, there is no guarantee that the real situation in two countries is the same. This principle applies equally to government value added as to government expenditure.

The form in which government chooses to spend its money also influences the picture. To some extent, governments have a choice of methods they can use to achieve their social objectives:

- they can produce services for people (referred to in the definition as non-market output for individual and collective consumption);
- they can pay cash benefits (i.e. redistributing national income and wealth).

No matter which combination of these two methods it uses, government has to find the resources to pay. Both are therefore relevant to measuring the size of government; but unlike the production of services, cash benefits are not a component of GDP:

- Payment of cash benefits is an internal transfer within the economy from government to households; it is not final expenditure. Final consumption takes place when households spend the money; at that stage, it does appear in GDP - as households' final consumption.
- But when we measure government expenditure by itself rather than as a component of GDP, it is logical that we include unrequited transfers. In summary, unrequited transfers – unlike other elements of government expenditure – are not a component part of GDP.

Case study:

- In the UK in 2001, unrequited transfers from government to households (mainly social benefits in cash) were £158billion. Being a transfer between sectors which adds no value, they do not feature in GDP Expenditure as a government transaction. They only affect GDP Expenditure when and if they are spent – when they will show up as household expenditure. These transfers amounted to 16% of GDP in 2001. The national accounts do not record how much was spent and how much was saved.

Source: United Kingdom National Accounts

In summary, comparability between countries using government's share in GDP is affected by issues such as relative prices, contracting arrangements and the degree to which governments choose to give unrequited transfers to people rather than providing them with services directly. From this, we conclude that looking at government expenditure as a percentage of GDP is not an ideal way to compare the size of government between countries. We therefore need to look at other approaches.

Let's look at the government's income

If there are difficulties with using government spending in relation to GDP as an indicator of the size of government, it might be better to focus on the resources available to government to carry out their activities. The resources which make government spending possible consist of government income plus net borrowing.

The income of most governments comes largely from taxation (equivalent to 31% of GDP in the UK for instance, 43% in Austria in 2001[2]). In addition, most governments have some property income. Net borrowing makes up the total – bridging the gap between income and expenditure and allowing more spending when other sources of income are insufficient and vice versa. The Stability and Growth Pact requires that this gap should be limited to 3% of GDP at the most.

Taxation differs from property income and borrowing: taxation is unrequited while property income and borrowing are transactions which result from agreements voluntarily entered into between government and the other parties. Taxation might be seen as an indicator of the size of government as far as the population is concerned: they are obliged to pay the taxes. The rest of the government's activities are, in a sense, self-financing.

As might be expected given what was said earlier in this paper, the ratio of taxes to GDP is higher than the ratio of government final expenditure to GDP: this is because the latter ratio notably does not reflect unrequited transfers made by government and which are mainly financed out of taxes. The existence of these transfers seems the most likely reason why, in Sweden, government final expenditure is 27% of GDP in 2001 whilst tax is 45%. For the U.K., we see a gradation in the measures we have examined, starting with government value added (8% of GDP) through government final expenditure (20% of GDP) to tax (31% of GDP).

The definition of tax included in the measures quoted above is unrequited levies paid to government covering taxes and social security contributions. In addition to raising money to fund its budget, government often acts as a social insurance scheme and, in some cases, as a pension fund. If we add the payments – both compulsory and voluntary – which people make to government for these purposes, tax moves up to 55% of GDP in Sweden and 38% in the U.K. It does not end there. In some cases, government social security and pension schemes are taking on future obligations which, as yet, they have no income to pay. These are the so-called "unfunded"

[2] Figures for all Member States are reproduced in Annex A

schemes in which government has agreed to settle future obligations as they arise. Although no cash changes hands, these obligations are very real ones and, where possible, the present value of the resources required to pay them are included in the national accounts. Taking these into account adds a further small amount to the ratio of tax to GDP (though that may be an underestimate as these obligations cannot always be quantified).

Which measure to choose?

A range of measures for the size of government has been presented above. The choice we make will depend on the role that best characterises government. We began by considering the role of government in relation to GDP.

- *GDP* is very largely about producing goods and services – which are then consumed or otherwise used up.
- *Government* is characterised by both the services it produces and its redistributive role. What government spends is a broader concept than its contribution to the different measures of GDP. This needs to be captured in a measure of the size of government.

Looking at the government's total income allows us to focus on its activities in the widest sense. In addition, it takes account of how the production of government services is paid for (which is a more important issue within government than within GDP as a whole). The fact that what government spends is made possible very largely by obligatory taxes gives them an importance not attached to voluntary transactions such as consumers' spending. So a measure which reflects tax revenue as % of GDP encompasses a number of features which are of interest:

- the level of activities carried out by the government
- the contribution which taxpayers have been obliged to make to finance government's activities
- the relevance of this measure is recognised in the methodological manuals. The IMF's Government Finance Statistics Manual includes it as one of its analytical measures for fiscal policy [3]

Summary and conclusions

Today's emphasis on government deficit and debt as policy targets may one day give way to different concerns. The size of government is an obvious issue for which statisticians should have a measure ready for when the spotlight falls on it. The choice is between a measure based on the money the government gives out and one based on its revenue.

National governments have more in common when we examine their profile of their income than when we examine their expenditure. Comparing their income is comparing like with like: government income does not vary greatly in profile. It is mainly made up of taxes, some of which – e.g. VAT – have an element of commonality across the European Union. Some countries show a greater preference for direct taxes e.g. Denmark, Sweden and the UK; some for indirect taxes, e.g. Greece and Portugal. And in some countries, social contributions are particularly important, e.g. Germany and France.

As for expenditure, the responsibilities that governments undertake vary from one country to another. It is not yet possible to measure the real volume of governments' service provision in a comparable way between countries. And there is the further complication that a measure which includes governments' unrequited transfer payments is not in itself a part of the GDP it is being compared to: this absence of coherence may lead to a lack of confidence in such a measure.

While not a perfect measure in all ways, there is a good case for saying that tax as a percentage of GDP is the most practical and comprehensible measure of the size of government. If we're making comparisons, it's better to compare items which are similar than those which are not.

[3] International Monetary Fund (2001): Government Finance Statistics Manual, p46

ANNEX A

Table A1. Government gross value added as % of GDP

	2000	2001
European Union		
Euro-zone		
Belgium	..	..
Denmark	19,1%	19,3%
Germany	9,6%	9,4%
Greece	12,0%	11,8%
Spain	12,0%	11,9%
France	16,1%	16,1%
Ireland	..	..
Italy	12,5%	12,5%
Luxembourg	..	..
Netherlands	12,5%	12,5%
Austria	12,0%	11,6%
Portugal	..	..
Finland	15,6%	15,7%
Sweden	..	..
United Kingdom	8,3%	7,5%

Source: Eurostat Datashop

Table A2. Government final expenditure (consumption and capital) as % of GDP

	2000	2001	2002
European Union	22,5%	22,1%	22,3%
Euro-zone	22,7%	22,3%	22,5%
Belgium	22,5%	22,3%	22,3%
Denmark	26,8%	27,0%	26,8%
Germany	21,4%	21,0%	21,2%
Greece	17,4%	17,0%	17,1%
Spain	21,3%	21,1%	21,5%
France	27,0%	26,2%	26,8%
Ireland	18,6%	18,8%	19,0%
Italy	19,7%	19,5%	19,2%
Luxembourg	22,2%	21,2%	22,1%
Netherlands	26,7%	25,8%	26,6%
Austria	20,2%	19,8%	19,9%
Portugal	22,9%	22,6%	22,6%
Finland	22,9%	22,7%	23,1%
Sweden	26,7%	26,7%	26,9%
United Kingdom	19,8%	19,6%	19,9%

Source: Eurostat Datashop

Table A3. Total taxes as % of GDP

	2001
European Union	39,8%
Euro-zone	41,4%
Belgium	45,5%
Denmark	49,7%
Germany	41,2%
Greece	36,3%
Spain	35,5%
France	44,3%
Ireland	30,5%
Italy	42,6%
Luxembourg	40,4%
Netherlands	40,0%
Austria	42,6%
Portugal	35,9%
Finland	45,0%
Sweden	45,3%
United Kingdom	31,1%

Source: Statistics in Focus: Compulsory Levies in the EU, Eurostat 2003

NON-MARKET SERVICES IN THE EUROPEAN COMPARISON PROGRAMME: A STORY OF METHODOLOGICAL VARIANCE

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I. Introduction

I.1 Some Preliminaries

Questions about the size of government are usually of particular interest from the international perspective. Key figures of this kind exhibit a variety of relative sizes of the public sector as a whole and, if more detailed data are available, of the various functions of government. However, there is no clear *a priori* answer as to how to measure on an international scale. National Accounts (NA) figures on government will not be immediately comparable, because they are denominated in different currencies, and for other – perhaps more important – reasons, too. The development of appropriate methodologies and their ongoing standardisation is the subject of the "official" International Comparisons here at issue.

The most simple and easily available indicator is the "Share of Government Expenditure in GDP", calculated on the basis of national prices. However these shares are, in principle, non-comparable because they are calculated on the basis of different national price structures: in different countries similar things cost different amounts, thus absorbing different proportions overall. Accordingly, the respective shares based on the "real" values obtained on the basis of "Purchasing Power Parities" (PPP) can significantly change the picture. **Table 1** shows the respective indicators from the recent Eurostat comparison 2001 in National Currency and in Purchasing Power Standards (PPS)[1]. For the EU Member States the shares of General Government (GG) are more or less similar in both versions but they are very different for most of the Acceeding and Candidate countries. However, this is also at least partly a consequence of the unsolved problems of the international comparison of Non-Market Services, for which no "prices" are ready available at all. Subsequently some methodological preliminaries of this kind must be considered more closely.

The nature of services; their distinction from goods; and their evaluation in National Accounts (NA) are topics that have been discussed through the ages. In this debate the notorious problem of Non-Market Services (NMS[2]) (Delauney/Gadrey 1991) in particular seems to remain eternally. The main reason is that it is so hard to decide what should be considered as the "**output**" of NMS. That output is, after all, valued by convention as the sum of the costs ("inputs") of production, and the same assumption holds for the consumption side too ("cost assumption", "input approach"). That way any differences resulting from the conversion of input to output are, by definition, ignored. On such grounds it is difficult to find points of reference for an approach which **compar**es NMS in "**real terms**", and is not based on mere input costs.

This paradox applies even at national level, e.g. for time series of NMS (intertemporal comparison). Incontestable methods for **international** (interspatial) NMS comparison are all the more complicated. Characteristically, NMS on the international level have even been apostrophised as "comparison resistant"[3]. And despite some

Recent methodological improvements, they will presumably remain so, strictly speaking. However, as a pragmatic solution, the convention has been generally accepted in all international exercises of this kind as the pivot, fully effective but capable of some refinement, as is pointed out later in this paper.

[1] PPS are a European conversion unit to achieve a common numeraire of comparison; its value comes close to the _ introduced later on.
[2] NMS are services provided by the general government and/or the NPI either free of charge or at prices which are not economically significant ("nominal fees"). Cf . ESA 1995, 3.27ff (SNA 93, 6.49ff)
[3] term originally suggested by G. Szilagyi (Hungary)

Table 1. Eurostat 2001 comparison: Share (%) of General Government in GDP

	Shares in GDP (%) in NC			Shares in GDP (%) in PPS		
	GG: Indiv. Consum.	GG: Coll. Consum.	GG-Total	GG: Indiv. Consum.	GG: Coll. Consum.	GG-Total
GERMANY	11.1	7.9	**19.0**	10.8	7.1	**17.9**
BELGIUM	13.8	7.9	**21.7**	13.2	7.9	**21.2**
DENMARK	17.7	7.8	**25.5**	17.4	7.6	**25.0**
GREECE	5.9	9.6	**15.5**	7.3	11.2	**18.7**
SPAIN	9.9	7.3	**17.2**	10.8	8.1	**18.9**
FRANCE	14.2	9.1	**23.3**	14.3	8.6	**23.0**
IRELAND	9.2	5.5	**14.7**	9.8	5.8	**15.6**
ITALY	11.5	6.9	**18.5**	11.3	6.7	**18.0**
LUXEMBOURG	10.2	7.0	**17.3**	7.4	5.5	**12.9**
NETHERLANDS	12.3	10.9	**23.2**	14.0	10.8	**24.9**
AUSTRIA	11.6	7.6	**19.1**	10.9	7.6	**18.5**
PORTUGAL	12.2	8.4	**20.7**	11.1	10.2	**21.1**
FINLAND	13.5	7.6	**21.0**	13.3	8.0	**21.3**
SWEDEN	18.6	8.8	**27.3**	18.7	8.9	**27.5**
UNITED KINGD.	12.0	7.4	**19.4**	12.3	8.5	**20.8**
ICELAND	16.1	7.6	**23.7**	17.1	8.6	**25.7**
NORWAY	13.9	6.3	**20.3**	13.9	6.5	**20.2**
SWITZERLAND	7.6	7.3	**14.9**	6.3	6.9	**13.3**
BULGARIA	7.8	9.8	**17.6**	13.8	19.9	**32.3**
CYPRUS	9.4	8.3	**17.7**	8.9	8.9	**17.7**
CZECH Rep.	10.8	8.3	**19.2**	19.8	11.4	**31.1**
ESTONIA	10.6	9.7	**20.3**	20.6	16.5	**37.1**
HUNGARY	11.0	10.3	**21.3**	19.9	14.4	**34.2**
LATVIA	10.2	8.5	**18.7**	21.0	15.7	**36.7**
LITHUANIA	12.9	7.1	**20.1**	26.8	12.3	**38.5**
POLAND	7.6	10.2	**17.8**	10.8	16.8	**28.2**
ROMANIA	8.6	6.3	**14.9**	17.6	13.3	**31.0**
SLOVAKIA	9.0	11.0	**20.0**	20.4	17.0	**38.1**
SLOVENIA	12.2	9.1	**21.3**	14.9	10.8	**25.7**
TURKEY	4.7	9.4	**14.1**	8.8	17.3	**25.8**

GG = General Government (Individual and Collective Consumption)
PPS = Purchasing Power Standard
NC = National currency

Source: Official results of the Eurostat comparisons for 2001; New Cronos; the results for Malta were not published.

1.2 The Cycle of Methods

It is useful at this stage to recall the basic accounting characteristics of the approach to international comparisons:

Expenditure ratio = Price ratio * Quantity ratio

More commonly in international comparisons the price ratio is called “purchasing power parity“ - PPP, for short. The quantity ratio is tantamount to the “volume index” (in the sense used in the NA) – often considered the very target of the comparison.

From this formula it is immediately clear that each element can be used as the **starting point** of the methodological procedures required for comparison, and has indeed so served in the various applications undertaken so far:

Expenditure ratio / PPP = Volume index, etc.

That way it is also clear: if the NMS expenditure data are defective, or in some other way non-comparable, no PPP from whatever reference, and even if fully suitable, can help to produce the correct volume indices. However, even if expenditure data are defective we can still obtain the "true" volume index by using some quantity approach, which by its very nature is independent of any monetary terms. Of course, in this case too, the resulting PPP would turn out "false" — but the volume comparison would still hold its independent meaning.

This makes clear two **basic requirements** of comparability, viz. the **compatibility** of the expenditure data with the conversion factors used (PPP; quantity indicator), which is a question of **definition** (of the NMS as such); and the **comparability** of those factors **across the countries** involved. Deficiencies in any of these respects must result in limitations if not failure of the comparison.

On that basis – viz. the cost convention and the conversion cycle – the crucial points of the actual methodology of any NMS comparison can now be addressed:

Price approach *vs* quantity approach

Application of productivity adjustment (PA)

Applied to "expenditure" the price approach ("deflation", in NA language) turns out to be an indirect way of comparison, as suggested above; whereas the quantity approach, by confronting the figures in terms of physical units, works directly. In either case the final results are rendered comparable by transformation into a common "cash" currency, and both are "input approaches".

PA may appear in either of the input approaches (price or quantity), but with different methodological options. The methodological position taken on PA is the very issue of NMS comparisons, and several examples of this kind can be found in the history of the European exercises. Before PA is discussed in greater detail it is useful, therefore, to briefly discuss how the organisation of the latter has developed.

I.3 History and Organisation in Brief

The history of international comparisons developed along two main lines: the worldwide UN-guided "**International Comparison Project**" (ICP, launched in 1968; from 1989 onwards "**Programme"**) and the narrower but more frequently conducted "**European Comparison Programme**" (ECP). While the ICP happened in multi-annual "**Phases**" the ECP was at first quinquennial, then triennial and since 1999 has been annual. It is conducted by Eurostat in co-operation with the OECD.

The ECP has been organized in terms of a number of country sets ("**Groups**"), each with slightly different classifications and methodologies. For 1996 there were three such groups: Group I – Eurostat / OECD countries; Group II – Central European transition countries and some CIS countries; and Group III – CIS countries. Initially NMS were treated differently in the different ECP Groups. However, after the recognition of the Accession procedure the new situation was reflected in the ECP, too, with essential consequences in the field of NMS: in all three groups NMS are now being treated in accordance with the Group I methodology.

It must be observed at this point that the broad methodological literature on the ECP cannot be set out here, even for the NMS segment alone. The principal positions have been described in a range of methodological papers emanating from the respective working bodies. (OECD 1997 & Eurostat 1997/Group I); (ACSO 1997/Group II); and (OECD 1998/Group III).[4] The following discussion draws on this material but there have also been related developments both before and since which are also occasionally taken into account. Year 1996 is the most interesting reference period in this context, because of its characteristic of fully reflecting the more differentiated methodologies used up to then.

[4] The methodological situation after 1996 is most easily accessible in "PPP and Real expenditure. 1999 benchmark year", OECD, Paris, 2002.

I.4 Outline of the Paper

The primary approach of this paper is an illustrated overview of the various concepts used so far in the different ECP Groups. This "**historical**" approach to discussion of the present problem is useful because in the past one can find the methodological variance, whilst more recent developments tend towards increasing uniformity. However, the "historical" approach used for this investigation should not be questioned for the sometimes less sophisticated if not simplistic methods **actually** used so far. In international comparisons the rule is often "The easier the better", so that resort must be had to methods which may be only slightly reminiscent of more ambitious "scientific" approaches.

The rest of the paper is accordingly organised as follows:

First, the experience from comparisons conducted up to 1996 (with numerical examples) is briefly reviewed and critically evaluated on the above lines; as mentioned, this discussion follows the **historical** developments, concentrating on the concepts adopted in Europe. Brief conclusions weigh the pros and cons of how allowance has been made for the obvious differences in the economic production of NMS output and/or its quality proper (**Section II**). **Then**, by contrast, the **present** situation is considered (again with numerical examples); this involves certain methodological changes if not improvements (**Section III**). On that basis, **finally**, the outcome of some research is evaluated and some possibilities for improvement are considered for the future (**Section IV**).

Tabular presentations are given for 1995, 1999, 2000 and 2001.

Overall, the subsequent text demonstrates the somewhat precarious state of the art in an important field of official programmes of statistical measurement: there is still a variety of possible answers on this issue even within the standards used so far; the outcome of the existing exercises still suggests significant degrees of incomparability; and there is still a surprising lack of response to those difficulties.

II. The ECP until 1996: an exemplary review of the past

II.1 Early Phases of ICP

Phases I (1970) and II (1973) of the UN ICP did not use any adjustment for the treatment of Non-Market Services (NMS), which were broken down only by activity and a standard set of input components. Such a methodological position is tantamount to the assumption that productivity of NMS is basically equal across countries. This was soon recognised as a source of possible misinterpretation and even a serious drawback for ICP as a whole. (UN 1980)

In effect, in Phase III (1975) **Productivity Adjustments** (PA) were introduced for the NMS, differentiated by broad groups of countries. Several approaches were proposed, e.g. an adjustment for different productivity of inputs (Medical Care); a simple adjustment for capital per worker (Medical Care and General Government); an introduction of a specific dimension of output (numbers of pupils/students/teachers in Education). Similar methods were attempted within the first round of the ECP (1980), but only for Group II countries. the adjustments, based on rough assumptions, were generally quite conservative.[5] [6]

From the second Phase of the ECP (1985) onwards, within Group II an even less sophisticated method was adopted and equally applied in the next rounds of the ECP (1990, 1993). It was assumedmade that differences in productivity prevailing in the non-market sector are roughly similar to the **overall** productivity differences found for the market sector as a whole (more accurately, the non-agricultural market sphere).

The PA problem was resumed and discussed more intensively during the ECP 1996, which was organised in three Groups. A short overview of approaches used in the three ECP Groups and an evaluation of the results obtained during the last ECP rounds follows.

II.2 ECP/Group I

Within the Group I comparison the "price approach" is used exclusively. It is based on "deflation" of compensation of employees, by selected occupations; whereas all other components – mainly representing "Interme-

[5] For example, for Hungary a decreasing coefficient (PA) was assumed at 1.05 (USA =1) only.

[6] A more detailed description of concepts and procedures applied up to then is given in the celebrated "World Product and Income" , Chapter V: "The treatment of services" (Kravis 1975)

diate consumption" – were deflated by some appropriate "reference PPP". This approach had already been adopted at the outset of comparisons for the European Economic Community, in those days a relatively homogeneous set of advanced countries. The lack of universally accepted methods, comparability problems and practical (possibly even political) considerations may have resulted into the conclusion that here it is preferable not to apply PA at all,[7] despite the theoretical arguments for them in this area, too.

However, in the later rounds of comparison, with an increasingly heterogeneous set of countries, both these approaches in combination (i.e. exclusive use of price data and absence of any PA) resulted in some cases into conspicuous if not suspicious outcomes:

- for certain countries the NMS results seem to be at variance with their general levels of economic development;
- for certain countries the NMS results have not turned out to be sufficiently stable over the different rounds of comparison.

Indeed, some results[8] for Group I countries were either surprisingly high or surprisingly low in all rounds. **Table 2** shows results obtained within the Eurostat **1995** comparison [9], in several cases particularly questionable. Even allowing for a certain degree of divergence of NMS- and GDP-levels, some results appear quite paradoxical (see figures in **bold**).[10]

Table 2. ECP/Eurostat 1995 comparison: Ranks and Volume indices (p.c.)

	Gross Domestic Product (GDP)		Health		Education		General Government	
	Rank	**EU15 = 100**	**Rank**	**EU15 = 100**	**Rank**	**EU15 = 100**	**Rank**	**EU15 = 100**
Luxembourg	1	169.0	**10**	**90.7**	7	133.5	**11**	**103,9**
Switzerland	**2**	**133.8**	**4**	**107.7**	**13**	**103.0**	**16**	**84.1**
Norway	3	122.3	7	97.3	6	134.7	4	118.3
Iceland	4	118.2	3	112.0	4	141.3	7	112.8
Denmark	5	116.1	**12**	**86.8**	**1**	**178.6**	**15**	**84.6**
Belgium	6	112.2	6	99.7	2	153.2	1	125.6
Germany	**7**	**110.6**	**2**	**131.9**	**17**	**78.5**	**17**	**77.2**
Austria	8	108.2	9	93.1	8	125.2	6	114.2
France	9	107.5	1	132.6	9	113.9	5	115.8
Netherlands	10	106.7	5	102.9	14	100.7	8	111.7
Italy	11	103.0	11	90.0	15	97.8	12	95.0
Sweden	12	100.8	15	65.2	11	109.2	2	122.4
Finland	13	95.9	13	80.1	5	135.0	13	91.8
Untd. Kingdom	14	95.8	8	93.6	12	107.9	10	104.7
Ireland	15	92.9	14	73.1	10	109.4	18	70.8
Spain	**16**	**76.7**	17	50.3	18	74.1	**9**	**109.5**
Portugal	**17**	**67.2**	18	42.4	**3**	**150.3**	**3**	**119.6**
Greece	18	65.7	16	59.0	19	67.2	14	86.9

Source: ."PPP and related economic indicators. Results for 1995 and 1996". Eurostat, 1999.

[7] It should perhaps be recalled: Not adjusting does not mean assuming "nothing" at all; it means assuming an equal productivity level for all comparing countries.

[8] Note that all results in this paper are given according to the concept of "Actual Final Consumption", as adopted by the ICP (cf SNA, para. 9.94). That way the aggregates for Household Final Consumption cover NMS actually consumed by households (education; health; social services).

[9] 1995 is typical; similar results could be put forward for the whole period 1993 – 1998.

[10] In one case - Portugal - one might tentatively explain this phenomena with the hypothesis that there are many more children at school age. However, an exemplary comparison on numbers of pupils and students for 4 countries (Greece, Portugal, Austria, Germany) quickly shows that volume indices p.c. are hardly consistent with the respective quantity data at all. For example, for Greece and Portugal numbers of pupils and students are similar, but the p.c. volume index for Portugal was three times higher than for Greece.

The volume indices for NMS are published at a fairly aggregated level ("Education" –Total, "Health" – Total, "Collective services/General Government" – Total, etc.) but not at the level of detail by components, such as "Compensation of employees"; "Intermediate consumption", "Consumption of fixed capital", nor by a more detailed activity breakdown within the series themselves. Thus the aggregates inevitably mask further implausibility of the more detailed results in many cases. Presumably for separate elements of input costs they might look even more questionable.

As mentioned, PA have never been used in the "official" Group I comparisons. A valid conclusion from this situation was given some time ago in a paper prepared for the meeting of the Working Group "Price Statistics", (OECD 1993):

> *"... there is a feeling that **greater use** should be made of **physical indicators to obtain volume measures directly.** The objective would not necessarily be to replace the present approach, but to provide an alternative set of volume ratios for the purpose of cross-checking".*

Within the OECD comparison it thus seemed all the more interesting to explore the impact of an application of PA for Group I, too, at least experimentally (also partly based on the experience of Group II; see below). Accordingly several experiments were carried out with the use of PA in different variants.[11]

The results showed that PA introduced in Group I comparisons would have a substantial impact on the results, particularly for those of less advanced countries like Greece or Portugal. As another example, the introduction of PA for countries with a medium level of development would result in a reduction of the volume index for GDP per capita by approximately 5-8 percentage points.

However, the results of these experiments were not yet regarded as conclusive. (OECD 1997, point 13) There were several reasons for this, principally the weak comparability of data about NMS employment which was considered crucial.

II.3 ECP/Group II

PA has always been considered in the Central European countries comprised in ECP/Group II. As a rule the quantity approach with productivity adjustments was used, with the price approach being used mainly for cross-checking of the results. A short description of the procedures applied is given below.[12]

Within the scope of the quantity approach two types of adjustments were employed within Group II:

1) The adjustment based on the **General Relative Productivity Level** (GRPL).

This assumes essentially that labour productivity differences in the NMS-sphere are equal to those of the non-agricultural market sphere[13]. Originally developed by analogy to traditional NA practice, this method was applied in the three rounds of ECP (1985, 1990, 1993). Information from a special Questionnaire was used, asking for data about value added and numbers employed in the market industries.

The GRPL-adjustment has been employed within the 1993 Group II comparisons for medical services, welfare services and general government services.[14]

2) The adjustment based on **Specific Relative Productivity Level** (SRPL)

For certain areas of NMS, SRPL has been adopted in the ECP/II because GRPL has been criticised as unsuited to services like Education in particular, where the contribution of equipment seems to be smaller than for other NMS.

The productivity adjustments in "Education" were therefore calculated by a specific method based on the teacher/pupil(student) ratios. For **schools** (a "passive" type of education, from a pupil's point of view) the quality of education was considered to be inversely proportional to the number of pupils per teacher (the more pupils the lower the teacher's productivity). For **university** education etc. an «active» type of education (from

[11] A review of these efforts was given in a special report (ACSO 1994) and in the ECE Report on the ECP 1993 (UN ECE, 1997)

[12] A rather detailed analysis was given in (ACSO 1996).

[13] In the GRPL approach the agricultural sector is excluded because of its instability (weather and climate conditions) and the productivity levels largely differing from the base country (Austria).

[14] with the exception of the bilateral comparison „Slovenia - Austria", where in some cases more sophisticated methods were used. These countries could provide additional, more specific information, e.g. input of special medical equipment in health, etc.

a student's point of view) is more characteristic: quality of education is largely determined by the time a student spends on studies and, correspondingly, the productivity of university teachers appears to be directly proportional to the number of students per teacher.

The subsequent example may show that the impact of the application of PA is obviously quite significant for all transition countries (Volume indices, per cent, Austria = 100;1996).

	Medical Care		Education		Gen. Government	
	with	without	with	without	with	without
	..... PA					
Russia	21.0	36.3	73.5	91.4	42.5	90.3
Romania	20.7	42.3	45.7	65.4	21.9	50.2
Belarus	19.7	39.6	73.9	112.9	21.4	55.9
Bulgaria	9.7	18.2	37.7	57.7	20.2	46.4
Croatia	14.0	28.9	29.7	49.8	41.2	92.2
Slovenia	43.3	67.3	67.2	86.9	53.0	85.9
Ukraine	10.2	33.1	42.4	72.6	11.0	42.6

Obviously also the methods used within Group II were far from ideal. An analysis of these methods was given in a related publication a few years ago (OECD 1998). But the main conclusion was nevertheless in favour of the Group II approach:

> "*While the exact procedures used to make "productivity adjustments" for the group II countries for 1993 may be questioned, it was felt that they did approximate an adjustment that made the comparison fairer than unadjusted data"*.

As a main conclusion from the subsequent international discussion, according to ECP 96/II the input approach in quantity terms (as a rule, number of employees) seems still to be superior to any input price approach. The available data sources provide more reliable information on the former rather than on the latter. Of course, it would generally be most desirable to use both data sets (if possible).

II.4 ECP/Group III

Concerning the treatment of NMS, Group III stands for the full use of "**Reference PPP**" [15]. The PA is achieved by this approach in an **indirect** way, via the use of "market" reference PPP as deflators. This method thus implicitly involves a PA element. For the salaries component, which is dominant, these PPP were derived from "Individual consumption expenditure". Reference PPP were used also for other elements of input (intermediate consumption, consumption of fixed capital, each separately) but this was also the case in Groups I and II.

In the above-quoted OECD document the various approaches are analysed in detail (in comparison with Groups I and II). In this evaluation by tendency the more "traditional" methods came out rather badly vis-à-vis the advantages of the Group III approach. The following major arguments favouring the use of Reference PPP for NMS comparisons were put forward by the OECD:

- PFCE is by far the dominant part of expenditure on GDP;
- the share of NMS in GDP is about the same in nominal and in real terms;
- it brings the results much closer to those of Group I and Group II methods.

However, another OECD paper raises some doubts about these methodological appreciations, and gives a more critical evaluation of the Group III method. (OECD 1997, points 16-18). Accordingly, it may be true that in market economies the PPP for NMS turn out to be fairly close to those for PFCE, but not inevitably, and perhaps only as a consequence of the underlying premises. In any case, such similarity cannot at all solve the prob-

[15] The proposal to use reference PPP, instead of the direct application of PA to NMS data, was not a really new idea. It has emerged practically at the beginning of the ICP already, and has re-appeared since then repeatedly. E.g. a similar proposal was made by G. Szilagyi for General Government in 1980.

lem with transition countries whose market segment of the economy is even less developed. Drawbacks attributed to other methods are valid here, too, because they may:

- have a significant impact on the results (sometimes even beyond PA);
- entail empirical results which are not always so realistic;
- be too reliant on the "Western" experience
- be dependent on subjective decisions taken by the compilers;
- potentially yield inconsistent results from year to year;
- be sensitive to the aggregate chosen as the reference.

Thus whilst also far from "ideal", the use of Reference PPP may be a practicable *ad hoc* solution under certain circumstances, but should not automatically become the method of preference (cf. OECD 1998).

II.5 An interim Appraisal

The following have appeared among the main variants used in the past (each embedded within the input approach – still state of the art):

1) **Price approach**
   a) without PA
   b) with PA

The input price approach on compensation of employees for selected occupations, but without PA, was the preferential approach of **Group I**.

2) **Quantity approach**
   a) without PA
   b) with PA

The quantity approach on number of employees with PA, was the preferential approach of **Group II**.

3) **Reference market PPP**

Involving an adjustment factor only implicitly, the reference market PPP was the preferential approach of **Group III**. It has also been used for input components other than compensation of employees in Groups I and II.

Accordingly, up to 1996 there was some development of method as well as of argument, but it was by no means consistent or conclusive. An interim appreciation of these achievements may be concluded as follows:

- From a "scientific" point of view the method of Reference PPP has no intrinsic advantage over the quantity approach as such, or quantity enriched with PA, or in terms of a price approach related to input components.
- The lack of comparability of expenditure data between countries is also an important reason for distorted results (this is the case sometimes even for Group I countries and typically so most transition countries).
- If expenditure data are defective, only the quantity approach will produce comparable volume indices.
- If no reliable specific conversion ratios (PPP) about compensation of employees or ratios on numbers employed are available, the use of Reference market PPP may still be argued, but from a merely practical point of view.
- Any approach practiced so far is a pragmatic *ad hoc* solution, a priori of limited validity.

In other words, there is no clear effective preference for any method so far. No generally accepted doctrine has yet emerged about whether PA is to be applied in practice, even less how this should be done in practice.

III. ECP Reformed: The Present Situation

1996 was the last period of investigation and practical experiment concerning PA. While theoretical discussions about PA have continued, in the meanwhile the general political environment of ECP has changed considerably with the applications for EU membership by a number of transition countries[16]. One element of their new sta-

[16] At the time of writing, 13 countries which formerly participated either under OECD or under Austrian coordination have the status of "Acceding Countries", or still "Candidate Countries" respectively

tistical obligations concerns **direct** participation in the "Eurostat PPP-Programme" (i.e. the "inner core" of the ECP).

The European Commission insisted on the application of strictly uniform and as such fully comparable methods for EU Member States and the CCs (later: Acceding Countries, AC). The latters' previous methodologies were thus no longer acceptable.The consequential loss of the use of the input price approach without PA was hence due to formal ("political") reasons rather than to the recognition of some intrinsic advantages of the Group I method. In this respect the former Group II (e.g. Slovenia) as well as some former Group II but later Group I countries (e.g. Czech Republic, Hungary) have probably gained in comparability of their results with the less advanced Member States (Greece or Portugal). At the same time their results are automatically less comparable with the "leading" EU countries.

In effect, the drawbacks of the pure cost approach (i.e. comparison without any adjustments) now apply to even more countries: see, for example, the results for the Eurostat comparisons 1999-2000, as presented in **Table 3** (volume indices per capita; EU 15=100).[17] The figures show that for many AC/CC the volume indices for NMS per capita turn out significantly (up to 3-4 times) higher than for the GDP. (Some doubtful results also concern EU countries – they are highlighted). Table 3 notably includes the figures for two consecutive years. It is clearly visible that the traditional doubtful result for Portugal (PT) for "Education" was considerably improved. However this is connected with significant revision of PT Salary data (cf. footnote 10).

However, with this new decision the systematic collection of additional information like quantity indicators or value added and employment by industries was also stopped. Indeed, there was no further possibility of experimental work, e.g. by trying different approaches.

For the moment, only the approach with **Reference PPP** (the "Group III method") can be repeated, by way of experiment, because this does not involve any additional data other than those collected anyway. Such experimental calculations were made for 2001 – see **Table 4**. The results of the experiment are ambiguous, too. For some countries they seem to be quite reasonable but in other cases they seem to be even more suspicious than those calculated by the "official" method.

[17] All results from the Eurostat comparisons 1999-2001 should be considered with caution because Eurostat is currently undertaking a comprehensive revision for 1995-2001, and considerable changes are expected in many cases.

Table 3. ECP/Eurostat Comparisons 1999-2000 , Volume Indices (V I) per capita

	1999 VI p.c. (EU15=100)				2000 VI p.c. (EU15=100)			
	Health	Education	GG-CC	GDP	Health	Education	GG-CC	GDP
GERMANY	110.6	73.8	92.6	106.7	114.3	71.3	91.6	106.0
BELGIUM	114.2	138.1	102.8	105.7	131.4	136.1	104.0	107.1
DENMARK	89.6	130.9	122.9	121.1	103.1	152.1	110.5	118.2
GREECE	90.3	85.7	89.3	67.9	67.3	56.0	93.2	67.4
SPAIN	79.1	113.2	84.2	82.4	68.8	100.6	83.0	81.9
FRANCE	117.8	103.1	115.8	99.7	120.3	102.2	110.5	100.8
IRELAND	65.6	106.5	71.8	110.1	69.5	112.5	78.4	114.8
ITALY	82.0	102.8	85.8	103.4	84.7	119.2	91.6	101.6
LUXEMBOURG	80.1	201.1	148.5	182.8	74.9	206.0	124.9	194.6
NETHERLANDS	105.8	103.8	150.3	114.5	109.8	113.3	145.2	110.8
AUSTRIA	103.4	146.2	109.5	111.3	96.3	138.4	105.3	113.9
PORTUGAL	79.8	170.0	93.2	72.9	61.8	112.7	86.2	69.6
FINLAND	83.6	128.6	107.4	102.2	85.5	123.2	106.1	103.6
SWEDEN	94.9	136.7	101.9	103.0	89.4	135.2	113.6	106.2
UNITED KINGDOM	104.7	86.7	104.8	99.6	104.9	95.4	108.3	101.9
ICELAND	128.6	169.5	170.9	120.0	141.7	189.1	124.8	116.9
NORWAY	137.6	146.8	116.6	124.9	148.2	157.9	115.6	147.0
SWITZERLAND	138.6	108.5	94.6	124.7	145.6	109.1	100.1	120.3
BULGARIA	64.1	82.9	50.4	27.1	22.0	68.8	56.9	25.5
CYPRUS	53.4	114.2	106.3	83.8	38.4	84.2	75.2	75.5
CZECH REP.	104.0	102.8	80.0	58.5	101.3	91.4	83.3	56.0
ESTONIA	46.4	131.5	87.9	36.8	46.7	134.2	82.1	40.0
HUNGARY	86.9	115.4	89.8	49.7	78.1	107.0	86.2	49.5
LATVIA	54.1	112.7	59.4	28.6	54.2	100.7	66.2	30.8
LITHUANIA	66.2	118.9	62.1	32.8	72.4	113.2	59.0	35.6
POLAND	43.4	81.9	51.8	38.9	42.8	87.7	75.5	40.3
ROMANIA	24.1	43.7	35.8	23.5	32.2	45.3	46.3	23.2
SLOVAKIA	95.0	100.4	69.9	48.2	91.4	84.9	94.3	45.7
SLOVENIA	93.3	117.6	96.3	68.3	83.7	107.4	88.7	66.9
TURKEY	8.3	39.2	47.0	26.4	8.5	44.6	54.0	25.2

GG-CC: General Government Collective Consumption
The results for Malta were not published.

Source: Official results of the Eurostat comparisons for 1999 and 2000; NewCronos

Table 4. ECP/Eurostat 2001 Comparison: „official“ vs. “experimental” Results

	V I p.c., “official” (EU15=100)				V I p.c., “experimental” (EU15=100)			
	Health	Education	GG-CC	GDP	Health	Education	GG-CC	GDP
GERMANY	106.6	77.3	91.2	103.1	111.5	95.5	104.5	106.0
BELGIUM	134.4	136.4	107.5	108.5	144.6	138.3	107.3	109.1
DENMARK	103.7	143.5	110.7	116.2	106.6	141.5	113.9	116.5
GREECE	65.7	57.2	90.6	64.5	57.6	45.1	72.6	61.9
SPAIN	68.8	103.2	85.3	83.8	64.3	89.2	75.4	81.7
FRANCE	122.0	98.1	110.9	102.5	121.9	100.8	118.4	103.2
IRELAND	69.8	105.8	84.8	117.5	72.0	91.2	78.8	116.0
ITALY	89.9	112.3	85.5	102.4	89.8	104.6	86.7	102.0
LUXEMBOURG	73.6	211.6	130.8	188.4	84.5	342.3	184.4	203.1
NETHERLANDS	109.0	111.2	155.3	114.5	106.8	101.3	155.5	113.5
AUSTRIA	91.2	127.1	104.6	110.5	91.0	133.4	107.0	111.0
PORTUGAL	61.1	109.7	90.0	70.6	57.9	120.3	72.9	69.6
FINLAND	87.9	119.4	104.1	103.9	82.1	106.1	94.4	101.6
SWEDEN	85.6	128.2	113.8	101.7	84.3	112.6	114.1	100.4
UNITED KINGDOM	110.3	101.4	109.1	102.7	107.7	95.9	94.7	100.9
ICELAND	138.7	158.5	122.3	113.2	127.1	131.7	102.1	109.0
NORWAY	149.1	153.4	115.4	142.8	151.3	132.0	108.5	140.6
SWITZERLAND	145.8	105.6	102.1	117.4	154.0	128.1	112.1	121.1
BULGARIA	21.5	70.3	60.9	24.5	10.0	19.2	22.8	19.6
CYPRUS	38.5	84.5	81.9	73.8	37.0	85.8	74.2	73.2
CZECH R.	99.8	86.8	84.3	59.0	69.4	45.7	53.0	53.2
ESTONIA	43.7	126.4	81.8	39.6	24.3	48.7	40.7	33.3
HUNGARY	71.8	107.6	94.6	52.6	44.9	49.8	58.3	46.1
LATVIA	51.1	102.8	65.5	33.3	25.7	41.9	29.4	27.5
LITHUANIA	68.8	124.5	59.3	38.5	32.7	47.1	28.2	31.6
POLAND	45.4	78.3	85.2	40.4	33.5	38.5	44.9	35.0
ROMANIA	32.4	57.5	39.9	23.9	16.9	19.7	14.8	19.6
SLOVAKIA	92.0	78.1	100.5	47.1	63.4	36.2	53.2	41.4
SLOVENIA	84.9	108.5	94.1	69.6	73.0	86.6	74.2	66.3
TURKEY	8.5	43.8	49.4	22.8	4.9	16.7	21.7	19.3

The results for Malta were not published.
Abbreviations: see Table 3

Source: Official version – the provisional results of the Eurostat comparisons for 2001; NewCronos.-
The experimental results were calculated by the authors, on the basis oe reference PPP for NMS.

IV. NMS Comparison beyond 2000: A Tentative Outlook

"To adjust or not to adjust" – this is still the question. With the NMS methodologies now being based on stereotype political decision a formal solution has been found for the present situation of ECP but, after all, this may not be satisfying in the longer term. Probably, it will fall somewhere between considerations of "**pure" methodology** - what would one prefer as researcher? and the political need of **methodological standardisation** - what should be adopted for countries participating in a comprehensive official programme?

Notwithstanding deficiencies in the data basis itself, the principal that it is desirable if not essential to take into account **differences in productivity** must be admitted by all sides.[18] The question is the concrete method of PA.

On the basis of the foregoing discussion on actual practices / practicabilities and the related conclusions drawn, **four** main approaches may be considered as general options of how to get on with eventual **introduction of PA** in the NMS comparisons:

A) Direct method (Quantity approach)

A.1 Global reference **PA** from the market sphere[19]

A.2 PA more **specific** for each NMS area [20]

B) Indirect method (Price deflation)

B.1 Global reference PPP[21]

B.2 Output price approach[22]

Within this scope an **Output price approach** has recently evolved as a particularly attractive solution (Eurostat 2001). While there may be reservations of principle vis-à-vis output-related methods applied in the field of NMS (Franz 1976) and although not really so new, the new tendencies towards such an approach deserve attention.[23]

If the approach is based on "true" prices, explicit PA could in effect be avoided. However, such a method requires some conception of output units to be identified and of "prices" to be associated with them. This may be possible only on the basis of additional assumptions regarding the costs to be attributed to output; or on some analogies between market and non-market circumstances. Data well comparable between countries would be required, price data well consistent with expenditure data and, above all, information on details. Since certain segments of health, educational and other social services are provided also on market basis it is in fact possible to find related market prices. Even some market analogues of "collective services" provided by general government can also be found.[24]

Some improvements must first be achieved at **national** level, based on a specific **country's detailed data**, which cannot easily be discredited as summary or arbitrary. This method requires above all the preparation of standardised but detailed lists ("bills") of individual "output" items, as the basis of output conversion, item by item.

As usual, solving one problem immediately produces another. The introduction of the output price approach will result in changes in the classification of expenditure data. For NMS the present classification system (COICOP) is still aligned with the input costs approach ("Compensation of employees" – "Intermediate consumption" – "Consumption of fixed capital"). Some modified classification would be needed, at least for the purpose of international comparisons, oriented on the notions of an output price approach (for example, for "Medical services": "Surgery" , "Therapeutic procedures", etc.).

Unfortunately, these prerequisites will not always be met. Even for inter-temporal comparisons (within a given country) of services generally and NMS in particular it is still often quite difficult to find prices (if artifi-

[18] or as Anne Harrison has stated in those disputes: „.. if the true value lies somewhere between 90 and 110, any estimate between 50 and 150 is better than 0 which is in effect what the option not to estimate amounts" (Harrison 1996)

[19] Main method used within ECP'93, Group II; cf. II.3 - GRPL

[20] As done in ECP'93, if in relatively simple form, for "Education" - cf. II.3 - SRPL

[21] Implicitly transferring the productivity differences of the market sphere, but on a more or less global basis only; cf. Section II.4, on Group III

[22] **C**ollection of market prices, or some substitutes, for the respective more or less concrete categories of services (market analogues of NMS)

[23] Experimental work has been undertaken (and continued) in several OECD Member Countries to develop output measures for health and education. – See respective documents of the recent yearly NA OECD meetings.

[24] services of private detectives as an analogue of those provided by police; etc.

cial) which are properly consistent with expenditure data, and fully representative by the scope covered, and the more so the less likely … This is the main difficulty with such an approach, otherwise apparently quite attractive. Other, less sophisticated, less specific approaches thus still seem to have a considerable future**.**

This closes the circle in terms of a **Resume**: There remains one problem to overcome: assessing a variety of possible answers, none of them is perfect, but finally they may be made to converge towards a single if not oversimplistic European standard. The point is only that more sophisticated solutions are not yet ready either. Thus the outlook on what to do or what is likely to come remains very unclear.

further progress can probably be expected from developments in disciplines superior to ECP rather than within ECP itself. New constant price measurement now evolving in the NA or the new regime of advanced methodologies in price index statistics are examples of this kind. However, for the time being the answer of ECP on NMS, whilst "official", remains dubious.

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PRODUCTION AND COSTS OF THE PUBLIC SECTOR IN THE NETHERLANDS

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Abstract

The first paragraph of the paper is concerned with problems of definition. In the Netherlands (and in Belgium) the term "quaternary sector" has been introduced for a concept which in the international literature is broadly referred to as "public sector." The term fits into the division of producers in a primary (agriculture), secondary (manufacture) and tertiary (commercial services) sector. The quaternary sector then comprises the remaining services.

The quaternary sector is defined as an aggregate of social functions, which more or less correspond to industrial classes: public administration, education and research, health care, social services, culture and recreation, housing and public transport. It should be noted that the definition of the quaternary sector is independent of the legal status of the producer, which may be public, private non-profit or commercial. Thus, the term "quaternary sector" is in fact by no means a synonym of the term "public sector", which refers either to the government and more or less independent organisations with a public legal status and/or to producers mainly financed with public means. In the latter case, the term "collective sector" may be used.

The second paragraph of the paper presents data for the Netherlands corresponding to the above definitions. The paragraph centres around two tables crossing industrial classes with legal status and mode of financing for the years 1990 and 1998. These tables show the relative importance of public, private non-profit and commercial producers in the quaternary sector and allow conclusions with respect to the impact of privatisation processes.

In both years, the costs of the quaternary sector amount to 37% of GDP. The share of government decreases from 14% to 11%. The share of independent public organisations increases from 4 to 5%. The share of non-profits increases from 14 to 15%. The share of commercial producers increases from 5 to 6%. The share of public means decreases from 65 to 62 percent. Thus in a decennium where much attention and publicity has been given to the privatisation of public services, the effects have been moderate except in the fields of public transport and housing.

The third paragraph discusses an application which focuses on final services. Fields covered include health care, education, police and justice, social services, public transport and some segments of culture and recreation. Around 50 separate task fields are involved in this analysis. These services represent a major part of the quaternary sector. In terms of expenditure about 70% of final quaternary services is included in the analysis. Of the public expenditure on final services, more than 90% is accounted for. In the case of final services, production can be measured either by value indicators or by physical indicators. In the first case use is made of deflated costs or revenue figures. In the second case, counts of the number of performances or users can be used as product indicator. Even in the case of final services, problems arise when assessing the heterogeneity, quality and effectiveness of the services involved.

In the period 1990-2001 the average yearly increase of the cost of these services, corrected for the price index of the gross domestic product, was 3.0 % in the Netherlands, slightly higher than the corresponding growth of the market sector (2.8%). However production in the quaternary sector increased only by 1.4 % in contrast to the 3.1% production growth in the market sector. The difference is caused by an increase of the relative cost price of quaternary services (1.6%) with respect to the average domestic product. The reasons for the increasing relative cost price of quaternary services is in part explained by the law of Baumol: a relative small increase

of labour productivity, accompanied by a considerable increase of wages and of the price and volume of material inputs. One of the factors involved is the increasing average age of the labour force in public service.

The fourth paragraph discusses a recent application involving the measurement of the total production of the municipal government layer in the Netherlands. Municipalities have a wide variety of tasks including education, social services, cultural and recreational services, environmental services, housing, infrastructure, public transport etc. etc. Apart from final services, intermediate services and purely collective services play a part. In the analysis presented, about 60 task fields and more than 100 individual products are distinguished. An attempt has been made to incorporate all these products in a single framework of analysis. The method is essentially implemented using available key data on public services. The production of intermediate services is indirectly measured by reference to the production of the final services at which they are aimed. In other words, the costs of the intermediate services are consolidated into the costs of the corresponding final services. Most difficult is the inclusion of purely collective services. Two alternative solutions are presented: estimation of production by norm indicators (number of inhabitants, square miles etc.) or estimation by deflating the costs with a constructed price index. At the macro-level, outcomes are very similar to that of the application in paragraph 4: an average growth of production in the period 1995-2000 with 1.5% per year and an increase of the relative cost price with 1.1% per year. However, at the municipal level, this latter increase is partly due to growing capital expenditures. Results at the macro-level appear to be quite robust to changes in the selection of product indicators.

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- B. Kuhry: Measures for municipalities 2003 (In Dutch: Maten voor gemeenten 2003). The Hague: Social and Cultural Planning Office, Research report 2003/9.

See furthermore:

- Social and cultural report 2002. The quality of the public sector (English summary). The Hague: Social and Cultural Planning Office, 2002.

1. Introduction

In the Netherlands, a number of planning offices has been established. These are governmental research institutions with a more or less independent status. The oldest one, the so-called Central Planning Office, has been founded shortly after the Second World War. The Social and Cultural Planning Office dates back to the seventies. Whereas the Central Planning Office has an economic orientation, the Social and Cultural Planning Office focuses at the welfare of citizens, using sociological as well as economic methods. The term "Planning Office" is somewhat misleading. Even in the past, the goal has never been planning in the strict sense, but rather the analysis of social developments, policy evaluation and forecasting.

At the Social and Cultural Planning Office of the Netherlands (SCP), methods have been developed to apply information on the performance of public services to the allocation of public funds. The emphasis on allocation problems means that an "helicopter view" is required, since it should be possible to evaluate the merits of alternative modes of utilisation of scarce means. In this particular macro-level approach, emphasis is therefore not given to a detailed analysis of aspects of separate production processes, but to a broad characterization of overall relationships. In implementing this aim, we are in need of a broad definition of the field of interest, which is not affected by institutional changes, but as a consequence is suitable for monitoring such changes.

In the Netherlands (and in Belgium) the term "quaternary sector" has been introduced for a broad category of predominantly non-commercial services. The term fits into the division of producers in a primary (agriculture), secondary (manufacture) and tertiary (commercial services) sector. The quaternary sector then comprises the remaining services, which are predominantly, but not exclusively, non-commercial and which in are quite often financed and/or regulated by the government. The involvement of the government is related to the characteristics of the services in question, which are either (quasi-)collective, implying that consumption is non-rival and/or non-exclusive an/or characterized by important external effects. In such cases, it is difficult to attain an optimal allocation of means by the market mechanism.

Strictly, the quaternary sector is defined as an aggregate of social functions, which more or less correspond to industrial classes: public administration, armed forces, education and research, health care, social services, culture and recreation, housing and public transport. The core of the quaternary sector is formed by the industrial classes 75 to 92 in the NACE (Nomenclature of Economic Activities in the European Union). The distinction between a purely industrial definition and a functional definition is among others apparent with respect to the issue of pharmaceuticals. In an industrial definition, these services constitute part of the retail trade. Functionally, they can however be related to the health care sector. A similar problem arises with sheltered workshops, which are from one perspective producers of simple goods, but from the other institutions founded to enhance the social well-being of their workers.

It should be noted that the definition of the quaternary sector is independent of the legal status of the producer, which may be public, private non-profit or commercial. Thus, the term "quaternary sector" is in fact by no means a synonym of the term "public sector", which refers either to the government and more or less independent organisations with a public legal status and/or to producers mainly financed with public means. In the latter case, the distinct term "collective sector" may be used.

2. Empirical data

This paragraph presents data for the Netherlands corresponding to the above definitions. The paragraph centres around two tables crossing industrial classes with legal status and mode of financing for the years 1990 and 1998. These tables show the relative importance of public, private non-profit and commercial producers in the quaternary sector and allow conclusions with respect to the impact of privatisation processes.

Table 1a: Costs by branch and legal status, 1998

	Total costs[a] (billion euro)	governmental organisations (%)	independent public organisations (%)	non-profit organisations (publicly financed[b]) (%)	non-profit organisations (other) (%)	commercial (%)	share of public finance (%)
public administration	12.2	89	1	5		5	80
armed forces	5.2	100					95
police and justice	5.1	24	73	2		2	97
tax office and admin. of social security	5.1	42	58				86
education and research	18.6	13	22	54		11	83
health care and social services	34.0	2	7	61	2	28	72
culture and recreation	11.4	13	6	28	26	27	25
social organisations	3.5			12	88		11
infrastructure	12.4	92	7	1	1		58
public transport	3.5		49			51	50
environmental services	5.0	44				56	15
housing	11.4	1			75	24	13
total quaternary sector	127.4	30	13	28	12	17	62
(idem, % of GDP)	37	11	5	10	5	6	23

[a] Costs including exploitation surplus

[b] Arbitrary boundary: more than 50% public means

Source: Kuhry and Van der Torre 2002

Source of underlying data: Statistics Netherlands, National Audit Office

Table 1a shows the total costs of the quaternary sector in 1998 and its subdivision by branch and legal status. With 127 billion euro, the costs of the quaternary sector amount to 37% of the gross domestic product. 62% of these costs were financed by public means (governmental expenditures and expenditures of obligatory social funds). Organisations forming part of the government represent 30% of the total costs of the quaternary sector. Apart from the central, provincial and municipal government layers, these also include organisations such as the tax office, the office of the public prosecutor and part of the public schools.

The share of public organisations with an independent status was 13%. The degree of independency of these organisations may vary: many of these organisations have an independent legal status (the so-called “zelfstandige bestuursorganen”), others a formal semi-independent status (the so-called “agentschappen”). In some cases, a degree of independence is indicated by financial streams and accounting responsibilities.

Non-profit organisations, which are either associations of foundations, represent 40% of the total costs of the quarternary sector. Among these, about two thirds are mainly financed by public means: these include private schools and health care institutes. A third is mainly financed by private means, such as sports clubs, labour associations, political parties and charity organisations.

Commercial organisations and professionals represent remaining 17% of quaternary costs. This category includes medical professionals, commercial sports organisations, privatised public transport, commercial house rental organisations etcetera.

As a result of the definition of the quaternary sector, there are virtually only commercial organisations with a private legal status in the primary, secondary and tertiary sectors (popularly termed “market sector” in our reports). The average share of public means in the market sector is small (around 2% if we ignore the material expenses of quaternary producers paid with public means).

If the public sector is defined as producers forming part of the government and independent organisations having a public legal status, the size of the public sector is given by columns two and three of the table. The public sector represents 43 percent of the quaternary sector and its size can be estimated as 55 billion euro.

If the collective sector is defined as the public sector plus non-profitorganisations which are mainly financed with public means, this sector corresponds to columns two to four of the table. Its size can be estimated as 71 percent of the quaternary sector (90 billion euro).

Table 1b gives comparable data for the year 1990. The nominal increase of GDP in the period 1990-1998 was 42%, of which about 17% was related to inflation. Most subsectors are characterized by a similar nominal growth. Environmental services and police/justice are characterized by a higher growth, public administration by a lower, whereas the armed forces are the only subsector with decreasing costs. The share of governmental organisations decreased from 38 to 30%, with compensating minor increases in all other types of organisations. Thus the share of independent public organisations increased from 11 to 13 percent, that of non-profit organisations from 38 to 40% and that of commercial organisations from 14 to 17 percent. Only in infrastructure, environmental services and housing the share of public means decreased markedly between 1990 and 1998. Still, the developments are rather moderate in a decennium, where privatisation of public organisations got much political attention and support. In fact, privatisations were mainly restricted to state enterprises such as the post office, telephone companies, the electricity sector and the public transport sector. Of these, only the latter is rated as a quaternary service.

Table 1b: Costs by branch and legal status, 1990

	Total costs[a] (billion euro)	governmental organisations (%)	independent public organisations (%)	non-profit organisations (publicly financed[b]) (%)	non-profit organisations (other) (%)	commercial (%)	share of public finance (%)
public administration	10.9	91	1	5		3	78
armed forces	5.7	100					97
police and justice	2.9	94	3	2		2	99
tax office and admin. of social security	3.4	64	36				100
education and research	13.3	14	31	52		4	81
health care and social services	22.5	3	5	65		26	71
culture and recreation	8.1	16	7	19	37	21	30
social organisations	2.3			10	90		11
infrastructure	8.3	96	4	1			46
public transport	2.4	81				19	63
environmental services	2.4	50				50	19
housing	7.9	10			58	32	38
total quaternary sector	89.9	38	11	27	11	14	65
(idem, % of GDP)	37	14	4	10	4	5	24

[a] Costs including exploitation surplus
[b] Arbitrary boundary: more than 50% public means
Source: Kuhry and Van der Torre 2002
Source of underlying data: Statistics Netherlands, National Audit Office

3. Quaternary sector: final services

3.1 Introduction

This line of analysis has a long history. Around 50 different task fields are involved and more than 150 different products. Fields covered include health care, education, police and justice, social services, public transport

and some segments of culture and recreation. These services represent a major part of the quaternary sector. In terms of expenditure about 70% of final quaternary services is included in the analysis. Of the public expenditure on final services, more than 90% is accounted for. Forecasting is an important aspect of these analyses and their use for policy advises, but not relevant in the present context.

On the input side, a distinction can be made between labour, material and capital. These inputs can be measured by value indicators (personnel, material or capital costs) as well as physical indicators (personnel in full-time equivalents, number of beds in hospitals etc.). In principle, both types of indicators are available at the input side and can be used simultaneously in analyses.

On the output side a similar distinction can be made between value indicators and physical indicators. In the market sector, an appropriate method of measuring output is the deflation of the revenue with the corresponding consumer price index. This is however not feasible if the price of the goods in question does not reflect the true market value, as is the case with many services produced by the quaternary sector.

An alternative strategy is to use physical product indicators, among which performance indicators and indicators of use are most prominent. Examples of performance indicators are number of income tax forms treated (tax office), number of performances given (theatre or orchestra) or number of crimes solved (police). Examples of indicators of use are number of pupils (education), number of patients (health care) and number of persons attending a performance. Evidently indicators of use are only an indirect measure of the real production. However, due to severe regulations concerning the services in question, the number of pupils and the number of patients are in fact a reasonable proxy for the production volume.

In practice, in analysing production one has to deal with three common measurement problems: heterogeneity, effectiveness and quality. For example, in dealing with patients, one has to account for differences in diagnostic category, in dealing with pupils for differences in initial abilities. At least in theory, heterogeneity can be dealt with by recognizing a number of different products. With the term “effectiveness”, I do not refer to the ultimate effects of the services rendered, which are often difficult to distinguish from effects of a changing context, but rather to the degree in which the primary purpose of the service is reached: for example, the number of successfully treated patients or the number of pupils advancing to the next grade. Quality is a rather vague and broad concept, dealing with aspects of the product which are relevant to the user but difficult to incorporate in the product indicator itself. Quality may be indirectly measured by objective process characteristics such as the percentage of qualified personnel or the percentage of trains departing according to schedule, or by subjective judgements such as consumer satisfaction.

The method uses data which are collected over the years as a matter of routine by Statistics Netherlands. Examples are the number of pupils by school type, the number of consults by physicians, the number of intakes by hospitals or the number of crimes solved by the police. In some cases, available data allow a more sophisticated analysis. For example, the tax office distinguishes more than 35 different types of products. In an analysis of educational production, pure counts of pupils can be replaced by measures involving information on study delay and study success (see appendix A for more details). In health care, a more profound analysis is obtained if the health status of patients is taken into account.

Aggregation is a basic technique in evaluating results. This is necessary when adding op heterogeneous products of a single producer, but also when aggregating separate services to larger clusters. For this purpose, services are added using unit costs as weights.

For a more profound discussion of the concepts and methods involved, the reader is referred to Kuhry and Van der Torre (2002, in Dutch[1]). In the next paragraph, a brief summary is given of the outcomes of this line of analysis.

3.2 Production and costs, 1990-2000

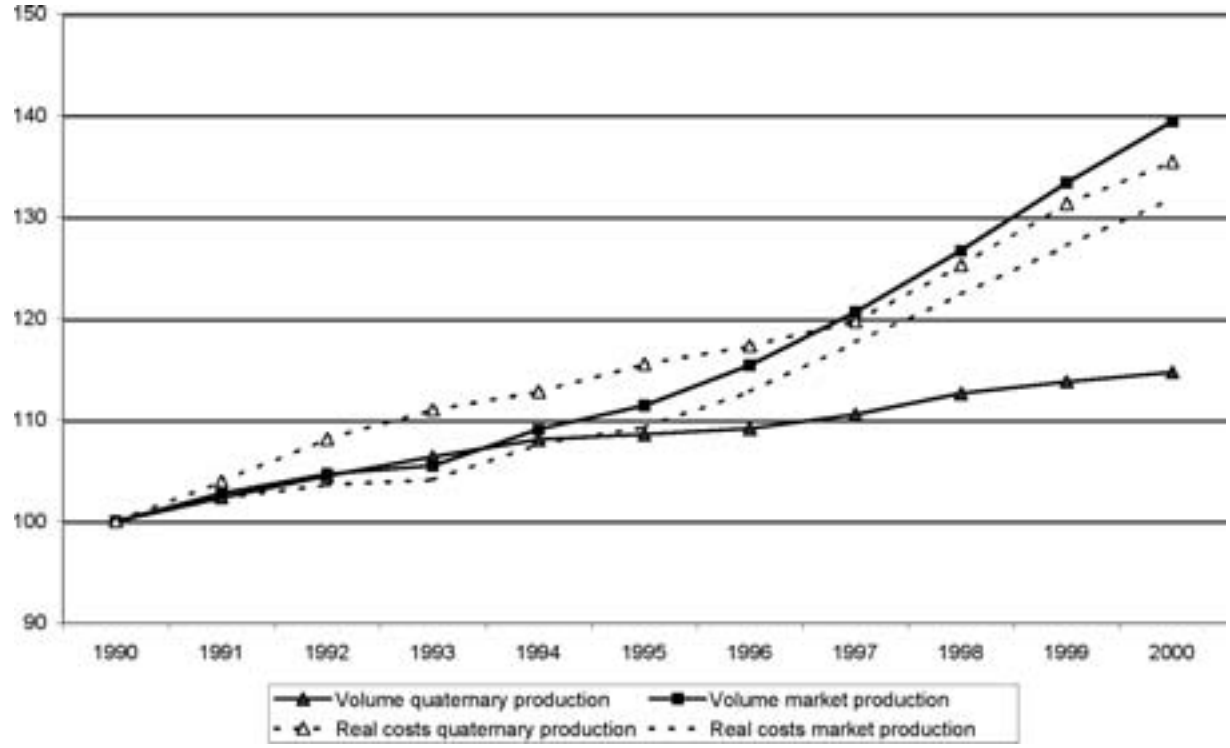
The costs of the services involved can be decomposed in production volume times cost per unit product. It is convenient to deflate the costs with the price index of the gross domestic product to obtain real costs. The growth rate of the real costs per unit product reflects the development of the *relative cost price* of the service

[1] B. Kuhry and A.G.J. van der Torre. De vierde sector (in English: The fourth sector. The Hague: Social and Cultural Planning Office, Research Report 2002/15.

involved with respect to the average domestic product. Approximately, the following rule holds: the growth rate of real costs equals the growth rate of the production volume plus the growth rate of the relative cost price.

Figure 1 shows that the increase of the production volume in the market sector is more than twice that in the quaternary sector (annual growth 3.1 versus 1.4%). However, in terms of costs, the growth of the quaternary sector slightly exceeds that of the market sector (3.0 versus 2.8%). The discrepancy between the development of production and costs reflects the increase of the relative cost price of quaternary services.

Figure 1: Quaternary sector and market sector



Source : Kuhry and Van der Torre 2002

Table 2 summarizes the results of the analysis at an intermediate level of aggregation.

Table 2 Quaternary sector: annual growth of real costs and production, 1990-2000

Task field (number of subcategories)	production volume (annual growth % 1990-2000)	relative cost price (annual growth % 1990-2000)
education and research (17)	**0.7**	**2.1**
- primary education (1)	1.0	2.9
- special education (3)	1.2	1.9
- secondary education (4)	-0.4	2.8
- vocational/adult education (5)	-1.1	3.7
- higher professional education (2)	2.5	-0.1
- university education (1)	-0.5	-0.9
- scientific research (1)	2.3	1.8
health care (16)	**1.8**	**1.2**
- hospitals and specialists (2)	1.3	1.6
- extramural care (4)	1.3	0.3
- mental health care (2)	2.2	1.4
- nursing homes (1)	1.6	1.9
- care homes (1)	-1.9	2.7
- home-care (1)	2.6	2.3
- care for the disabled (3)	1.6	1.9
- issuing of medicine (2)	7.2	-2.1
police and justice (5)	**0.2**	**4.5**
- police (1)	-0.9	4.7
- fire service (1)	1.2	1.8
- administration of justice (2)	1.3	7.2
- prisons (1)	6.0	1.8
other(23)	**1.7**	**1.4**
- tax office (1)	3.2	2.0
- administration of health care (3)	0.6	0.4
- administration of social security (5)	-0.9	2.9
- asylum seekers (2)	23.2	2.5
- child care (1)	12.1	3.1
- social services (2)	1.6	-1.2
- culture (5)	-0.5	1.8
- sport (2)	0.7	0.0
- public transport (2)	1.8	0.5
total public sector (61)	**1.4**	**1.6**
total market sector	**3.1**	**-0.3**

Source: Kuhry and Van der Torre 2002
Source of underlying data: Statistics Netherlands, annual reports of organisations and ministries.

Production

The key numbers for primary and secondary education mainly reflect demographic trends in the period reviewed. Notwithstanding a considerable decrease of the relevant age group, enrolment in universities only shows a moderate decline and enrolment in higher professional education even shows a considerable increase.

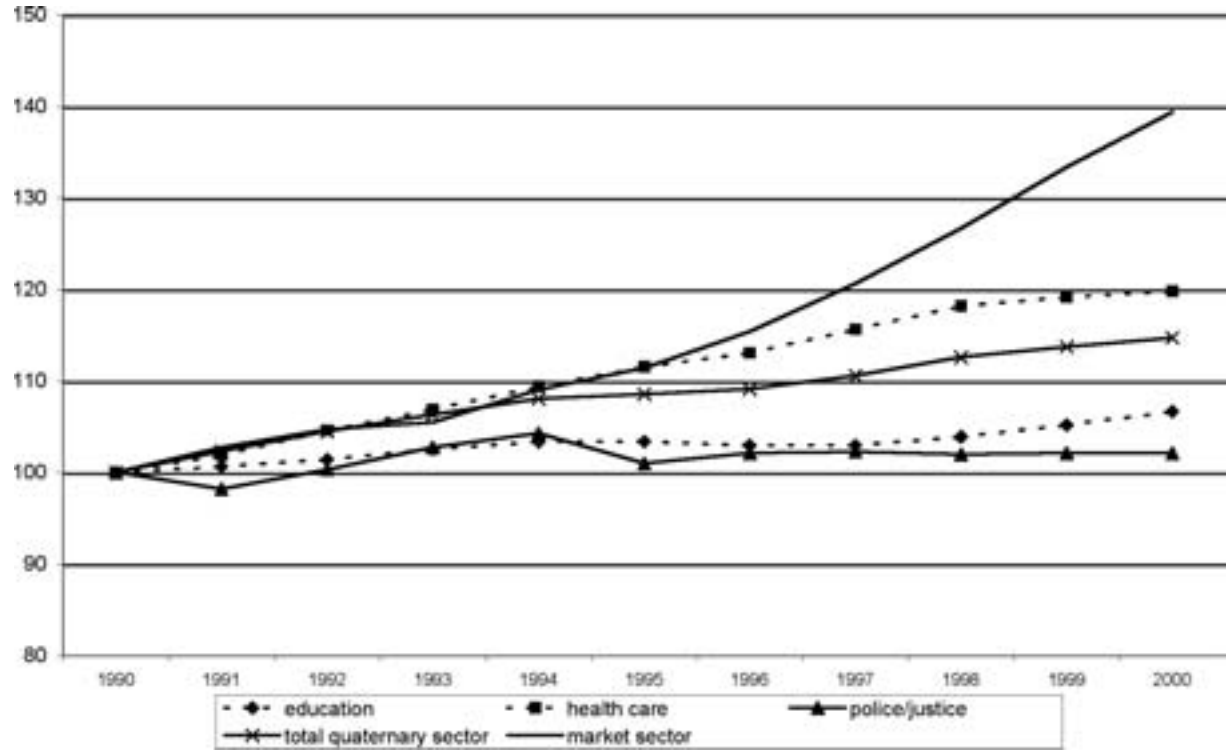
The increase of the volume of health care reflects a tremendous rise of the issue of medicine and a more moderate increase of home-care and of mental health care. The effects of ageing of the population are reflected in the volume growth of hospitals and nursing homes. Remarkable is the decrease of the number of clients in the care homes, which takes place despite ageing. This is due to a shift of the main function of these services from housing facility to health care institution.

In the field of police and justice, the rapid increase of the prison population contrasts with a decline in the number of crimes solved by the police. The former phenomenon is a result of longer sentences and less premature acquittals.

Among the rest group, a strong growth characterizes the administration and housing of asylum seekers and the capacity of child care. However, the number of asylum seekers shows a remarkable decrease in the period after 2000 (not recorded in the table), due to a change in the admission requirements.

Figure 2 depicts the growth of the production volume for the main aggregates in the study. The relatively rapid growth of the market sector contrasts with the slow development of education (demographic causes) and the police/justice chain (lagging performance). Health care is characterized by a moderate growth.

Figure 2: Production volume



Source: Kuhry and Van der Torre 2002

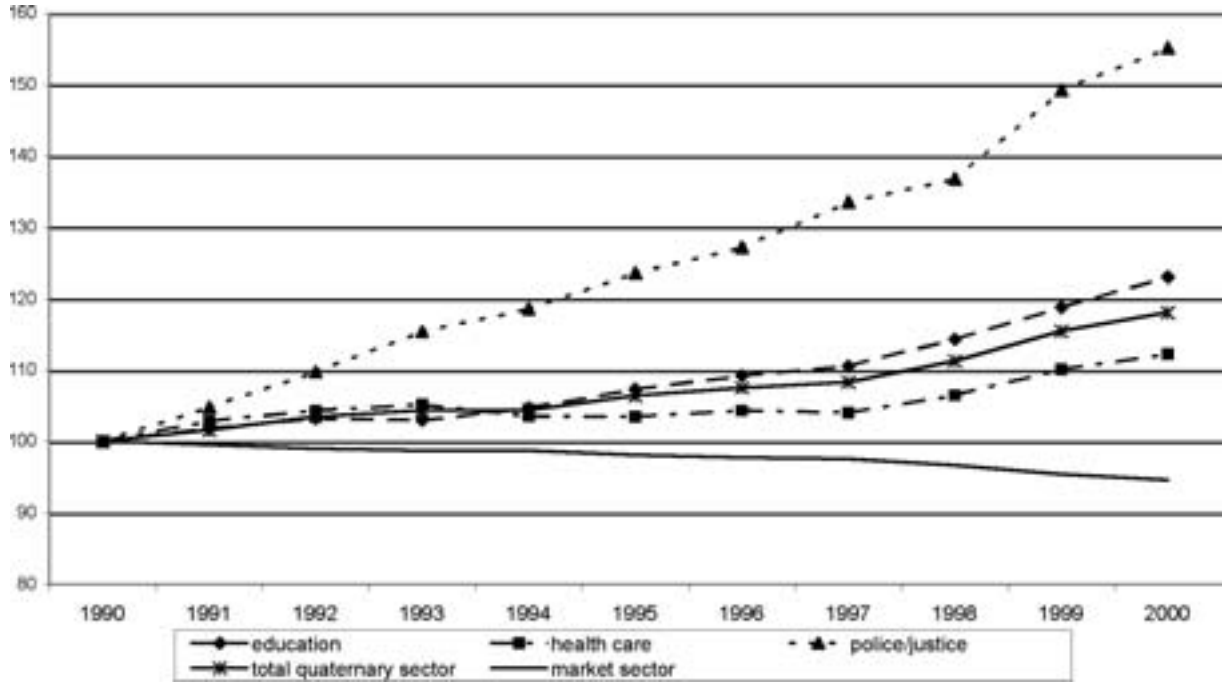
Relative cost price

The considerable increase of the real costs of the quaternary sector contrasts with a moderate growth of the production volume. This discrepancy is a result of the increasing relative cost price of quaternary services. This aspect is illustrated in the second column of table 2 and in figure 3.

Whereas products from the market sector are characterized by a slight decrease of the relative cost price, quaternary services, and especially those of the police/justice chain are characterized by in increase of the relative cost price. On the basis of figures 2 and 3 the conclusion can be drawn that substantial extra expenditures in the police/justice chain did not result in a growth of the corresponding production.[2] The relative cost price of quaternary services shows an average annual increase of 1.6% with respect to the average domestic product.

[2] Which does not necessarily imply that money was wasted. It can also mean that criminals get tougher and law procedures more complicated.

Figure 3: Relative cost price



Source: Kuhry and Van der Torre 2002

Table 3 gives a decomposition of this annual increase and offers a comparison with the market sector. The reasons for the increasing relative cost price of quaternary services is in part explained by the law of Baumol: a relative small increase of labour productivity, accompanied by a considerable increase of the price and volume of inputs. The main cause of the lagging labour productivity of many quaternary services is the labour-intensive character of the services involved. In education and health care labour cannot be simply substituted by machines or computers. However, a lack of incentives may also play a part. Another reason for the increasing relative cost price of quaternary services is the increasing average age of the labour force in public service.

Table 3 Decomposition of % average cost increase, 1990-2000

	quaternary sector	**market sector**
increase real costs	3.0	2.8
- effect production volume	1.4	3.1
- effect relative cost price	1.6	-0.3
relative cost price	1.6	-0.3
- effect real contractual wage increase	0.5	0.6
- effect incidental wage increase	0.7	0.1
- effect labour productivity	- 0.4	-1.0
- effect material and capital means	0.8	0.0

Source: Kuhry and Van der Torre 2002

4. Municipal performance

4.1 Introduction

Recently the approach sketched in paragraph 3 has also been applied to a second field: the total production of the municipal government layer in the Netherlands. The increase of the so-called general municipal fund is at present indirectly determined by the increase of the expenditure of the central government. The Dutch Ministry

of the Interior has launched a project to make the outputs corresponding to the available means more transparent. In the end, such an approach might give insight in the municipal needs.[3] The question raised can only be answered properly if a complete picture of municipal production can be drawn. However, municipalities have a wide variety of tasks including education, social services, cultural and recreational services, environmental services, housing, infrastructure, public transport etc. etc. Apart from final services, intermediate services and purely collective services play a part.

In 2001, a preliminary study has been published sketching the outline of a possible approach. Subsequently, a number of expert meetings has been organised. Recently, the first results have been published (Kuhry 2003)[4]. In this report, around 60 task fields and more than 100 individual products are distinguished (see table 7 in appendix B for an inventory of the fields involved). An attempt has been made to incorporate all these products in a single framework of analysis. Although the approach leads to a number of recommendations to improve of the available data, the method is essentially implemented using available key data on quaternary services. The production of final services is partly measured with value indicators and partly with physical indicators (either indicators of performance or indicators of use). The production of intermediate services ("overhead") is indirectly measured by reference to the production of the final services at which they are aimed. In other words, the costs of the intermediate services are consolidated into the costs of the corresponding final services. Most difficult is the inclusion of purely collective services. It is not very useful to measure the production of these services by the number of civil servants involved or the number of reports written. Two alternative solutions are presented: estimation of production by norm indicators (number of inhabitants, square miles etc.) or estimation by deflating costs with a constructed price index.

Rather crucial in the approach is a method of dealing with services which are only in part produced or financed by the government layer in question. In this case, the product can only in part be ascribed to municipalities. Since the analysis is carried out in relative terms, the growth rate of the production volume in comparison to the growth rates of the expenditure, problems only arise if the "share" of municipalities is changing. To correct for such changes, the production is multiplied with this share, being the quotient of municipal expenditure to total costs. It can easily be shown that this implies that the ratio of municipal expenditure to municipal production equals the ratio of total costs and total production volume.[5] This relationship only holds at the level of elementary products and not at the level of aggregates.

Of the 60 task fields involved, production is measured in 17 cases by an indicator of use, 15 by a performance indicator, 13 by a value indicator and 12 by a norm indicator. The remaining cases concern overhead. The weakest link in the analysis, the norm indicators, represent about 12% of total expenditure. If norm indicators are replaced by an approach in terms of constructed value indicators[6], the outcomes of the analysis at the macro level are virtually unaffected. In fact, macro outcomes appeared to be quite robust to a considerable number of adaptations of the analytical scheme and product indicators.

Table 4 gives an overview of the municipal income and expenditure. The term "expenditure" refers to the current account. Capital investments are included in the form of depreciations (but not of imputed interest).

[3] See for example: Plan van aanpak transparantie in de financiële verhouding (Action plan transparency in financing municipalities). The Hague: Letter of the Minister the Interior, December 12th, 2000.

[4] B. Kuhry 2003. Maten voor gemeenten (in English: Measures for municipalities). The Hague: Social and Cultural Planning Office, Research Report 2003/9.

[5] In other words, the relative cost price is a constant factor in the analysis, which in contrast to the production volume is not affected by mutations in municipal tasks.

[6] In this approach, costs or revenues are deflated with a constructed price index, namely the price index of the gross domestic product corrected for the average annual increase of the relative cost price of quaternary services (estimated at 1.3 %).

Table 4 Municipal income and expenditure

	1995	1996	1997	1998	1999	2000
gross expenditure task fields (mln euro)	29634	28747	28157	28228	29381	30151
specific contributions of central government (as % of gross expenditure)	40.9	42.9	38.8	41.5	39.2	40.5
task related income from third parties (as % of gross expenditure)	25.0	20.3	20.6	15.7	17.7	15.2
net expenditure (as % of gross expenditure)	34.1	36.8	40.6	42.8	43.1	44.3
net expenditure task fields (mln euro)	10100	10593	11431	12087	12654	13366
general municipal fund (as % of net expenditure)	79.4	79.8	80.1	80.7	81.4	80.5
revenue of municipal taxes (as % of net expenditure)	18.3	18.3	17.9	18.2	17.2	17.3
other income (as % of net expenditure)[a]	2.3	1.9	2.0	1.1	1.4	2.2

[a] including the balance of expenditure and income
Source: Kuhry 2003.

An important distinction is that between gross and net expenditure of municipalities. The net expenditure equals the gross expenditure minus task related income. This task related income is composed of contributions of the central government and of citizens in return for specific services. The net expenditure is financed from free income sources such as the general municipal fund (also a transfer from the central government) and the revenue of municipal taxes. In the latter case, municipalities have much more freedom of action. The focus on net expenditure in the analysis is motivated by its ultimate aim: the underpinning of decisions on the size of the general municipal fund.

In the following, a strict distinction is made between gross expenditure and the corresponding (gross) production on the one hand and net expenditure and the corresponding (net) production on the other. The difference in outcomes is due to two factors: 1) different weights of task fields, and 2) changes in the rate of net versus gross expenditure.

4.2 Production and costs, 1995-2000

Table 5 gives key numbers for the analysis of gross expenditure and the corresponding (gross) production.

Table 5: Correction of gross expenditure for mutations in tasks

	1995	1996	1997	1998	1999	2000	% growth[a] 1995-2000
uncorrected gross expenditure (mln euro)	29634	28747	28157	28228	29381	30151	0.3
real gross expenditure, index	100.0	95.9	92.1	90.7	93.0	91.7	-1.7
production volume, index	100.0	93.6	89.6	85.8	84.7	82.6	-3.8
real expenditure per product, index	100.0	102.3	102.7	105.7	109.8	111.1	2.1
effect nursing and care homes (mln euro)	-1516	-1511	-848	-26	-21	-13	
effect exploitation of housing (mln euro)	-3764	-1833	-1330	-1237	-1154	-1143	
effect other education (mln euro)	-4	-10	-11	-58	-192	-216	
corrected gross expenditure (mln euro)	24350	25393	25968	26907	28014	28779	3.4
real corrected gross expenditure, index	100.0	103.1	103.4	105.3	107.9	106.5	1.3
corrected (gross) production volume, index	100.0	101.4	101.8	101.0	99.6	97.2	-0.6
real expenditure per product, index	100.0	101.6	101.5	104.2	108.3	109.6	1.8

[a] average annual growth %.
Source: Kuhry 2003

The first line of the table shows the development of nominal, uncorrected, gross expenditure. The second line shows the index for gross expenditure after deflation with the price index of the gross domestic product. Lines three and four show the corresponding indices for the production volume and the real expenditure per product. The data in table 5 are obtained by aggregating results for separate task fields, analogous to the ones in table 7 in appendix B (however, this table refers to net in stead of gross expenditure). The data show a decrease of gross municipal expenditure and an even more marked decrease of (gross) production. However, this outcome is not directly relevant for an evaluation of the volume of the services involved, since part of the observed decline is due to the fact that nursing and care homes and housing corporations became (more) independent of the municipal government. After a correction for these task mutations (middle block of data), the decline of gross expenditure and gross production is less prominent.

Table 6 depicts similar key numbers for the analysis of net expenditure.

Table 6: Correction of net expenditure for mutations in task

	1995	1996	1997	1998	1999	2000	% growth[a] 1995-2000
uncorrected net expenditure (mln euro)	10100	10593	11431	12087	12654	13366	5.8
real net expenditure, index	100.0	103.5	109.6	113.9	117.4	119.1	3.6
production volume, index	100.0	102.8	109.8	111.2	111.3	111.2	2.1
real expenditure per product, index	100.0	100.8	99.9	102.5	105.5	107.2	1.4
effect accommodation of education (mln euro)	-11	-14	-513	-546	-579	-625	
corrected net expenditure (mln euro)	10089	10579	10918	11541	12075	12741	4.8
real corrected net expenditure, index	100.0	103.6	104.9	108.9	112.3	113.7	2.6
corrected (net) production volume, index	100.0	103.4	105.9	107.6	107.8	107.5	1.5
real expenditure per product, index	100.0	100.2	99.0	101.2	104.4	105.8	1.1

[a] average annual growth %.
Source: Kuhry 2003

In terms of net, expenditure a marked increase is taking place, which is slightly exaggerated by the fact, that municipalities acquired new tasks with respect to the housing of education. Behind the aggregated data in this table are the data per individual task field as depicted in table 7 in appendix B.

At the macro-level, outcomes are very similar to those for the final services analysed in paragraph 2.2: an average growth of production in the period 1995-2000 with 1.5% per year and an increase of the relative cost price with 1.1% per year. However, at the municipal level, this latter increase is partly due to growing capital expenditure.

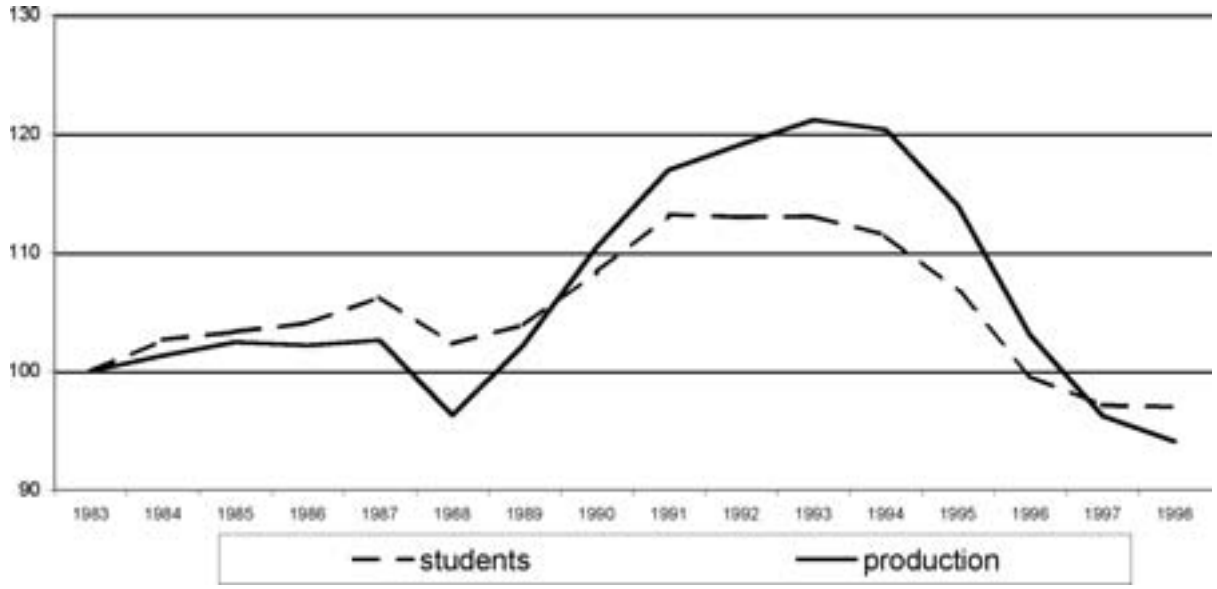
Problematic is the outcome that the growth of the production volume is declining and the growth of the real costs per product is increasing. Given a number of recent policy measures aimed at reducing the level of government expenditure in general and municipal expenditure in particular, the perspectives for municipal services are not very bright.

As various exercises show, results at the macro-level appear to be quite robust to changes in the selection of product indicators. This does however not hold at the micro-level. Therefore, the results as presented in table 7 of appendix B are experimental. A new round of expert meetings is foreseen. Furthermore, it is likely that the quality of the data and the methods involved will improve in the coming years. In subsequent reports, more emphasis will be given to the interpretation of the outcomes at the level of individual task fields.

APPENDIX A

Figure 4 compares the difference between a simple measure for production in university education versus a more complex one which takes study delay and study success into account. It is based on a model dealing with transition probabilities from one stage of the study to another dependent on the duration of the previous part of the study. This model is estimated using yearly data on the number of entrants, enrolled students and graduates.

Figure 4. Number of students versus production university education (index numbers, 1983=100)



Source: Kuhry and Van der Torre, 2002.

The figure shows three different stages: in the first stage (up to 1988) the number of students fluctuated. Subsequently there was an increase of the number of students, followed by a decrease. The fluctuation in the beginning was due to a shortening of the curriculum. The increase in the intermediate period was due to an increase in age specific participation. The decrease at the end was due to a combination of demographic effects (decrease of the corresponding age group) and policy effects (changes in the student grant system). Moreover, the performance of the education system was decreasing initially, increasing in the intermediate phase and decreasing in the ultimate period. This is a result of the relative decrease of the number of graduates.

This example illustrates that an improvement or change of the product indicator may have considerable effects on the outcome of a single analysis. The effects of a number of changes in different indicators for various fields on the aggregate production measure is often reduced, since the changes tend to cancel out (as is illustrated in the municipal case in appendix B).

APPENDIX B

Table 7 Municipalities: analysis of net-expenditure and corresponding production, 1995-2000

Task field (number of subcategories)	production (annual growth % 1995-2000)	real costs per unit product (annual growth % 1995-2000)
general administration (4)	**-2.3**	**1.9**
- city council (1)	-0.6	3.2
- central apparatus (1)	-3.4	1.3
- civilian affairs (2)	-0.9	1.9
public safety (2)	**3.3**	**2.0**
- fire service (1)	1.7	2.1
- other (1)	20.3	1.3
roads and waterways (3)	**0.9**	**1.2**
education (exclusive accommodation, 10)	**3.6**	**5.2**
- primary education (2)	4.8	5.8
- special education (2)	10.0	-1.1
- secondary education (2)	13.2	-0.4
- other education (4)	-5.7	8.4
education: accommodation (4)	**106.5**	**6.8**
social services (11)	**2.6**	**-0.7**
- subsidised employment (2)	-0.5	-1.0
- social services (5)	4.1	-3.0
- socio-cultural work (2)	0.7	1.3
- child care (1)	11.7	0.7
- caring homes (1)	-34.1	4.2
provisions for handicapped (2)	**2.7**	**2.5**
health care (2)	**1.7**	**-0.8**
- municipal health agency (1)	1.9	7.6
- nursing homes (1)	-100.0	2.0
social security (2)	**1.8**	**1.1**
- administration (1)	-5.9	-1.7
- transfers (1)	4.6	2.3
environment (3)	**3.5**	**0.6**
- administration of environment (1)	7.1	-0.9
- sewers (1)	-5.7	3.4
- sanitation (1)	10.5	-0.3
culture and recreation (9)	**1.3**	**1.1**
- culture and sports (4)	0.1	1.8
- cultural heritage (2)	-0.8	2.3
- parks and sport fields (3)	3.2	0.0
housing, town and country planning (4)	**-3.6**	**3.5**
- exploitation of housing (1)	-7.4	2.1
- administration of housing (1)	-3.6	0.4
- town and country planning (1)	0.2	7.3
- urban renewal (1)	-10.5	2.4
other services (2)	**9.5**	**4.2**
- public transport (1)	7.4	0.5
- economic affairs (1)	10.0	5.3
total municipalities (58)	**2.1**	**1.4**

Source: Kuhry 2003
Source of underlying data: Statistics Netherlands, annual reports of organisations and ministries.

EFFECTS OF ESA 95 ON THE SIZE OF THE LOCAL GOVERNMENT SUB-SECTOR IN AUSTRIA

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Abstract

In this paper, the effects of ESA 95 on the size of the local government sub-sector in Austria are studied empirically based on budgetary volumes. Starting from the institutional definition of the local government sub-sector in Austria, the budgetary volumes of the different local government entities inside and outside general government are examined for the period 1995 to 2001. In particular, the effects of ESA 95 rules on the economic structure of revenue and expenditure of local government authorities, as part of general government, and local quasi-corporations, which are assigned to the non-financial corporation sector, are analyzed. It is shown that institutional re-assignment of borderline cases, based on ESA 95 criteria, is of considerable importance concerning changes in budgetary volumes over time and concerning effects on relevant figures like government deficit and debt.

1. Introduction

The discussion on the size of the government sector concerning comparable measurement in the international context as well as analysis of changes over time on the national level has to consider several topics on institutional definition and delimitation, legal and accounting regulations, as well as practical issues concerning statistical data:

- administrative definition of the government sector by national legal regulations,
- institutional definition of the government sector for statistical or legal purposes,
- definition and shifts of responsibility for public tasks between government levels,
- mode and scope of the different functions and provision of services of government,
- institutional arrangements of service provision within and outside the government sector (out-sourcing, contracting out, public-private-partnerships, privatisation),
- (re-)classification of transactions in the legal context and in economic reality,
- changes in budgetary volumes as a result of statistical (re-)classification or changes in accounting practices (e. g. gross/net budgeting),
- changes in completeness of data collection.

The European System of Accounts 1995 (ESA 95) provides an internationally compatible, harmonized, consistent and operational conceptual framework and a methodology on common standards, definitions, classifications and accounting rules intended to be used for compiling accounts and tables on comparable bases for the purposes of the European Union. Further ESA 95 is the conceptual reference framework legally bound in the EU to other regulations which is of special relevance with regard to the Maastricht Treaty and Stability and Growth Pact including the excessive deficit procedure (EDP).

The effects of applying the ESA 95-rules on the size of the "local government sub-sector" are studied empirically in this article for the case of Austria. Starting with the institutional definition of the local government sub-sector in Austria according to ESA 95, the budgetary volumes (total revenue and expenditure) of the different local government entities inside and outside general government are presented for the period 1995 to 2001. Further, changes in the economic structure of revenue and expenditure are examined which result from changes in sector assignment as well as in the reaction to the necessity to achieve the convergence criteria for government deficit and debt imposed by the Maastricht Treaty.

2. Institutional Definition of the Local Government Sub-sector in Austria

The delimitation of the government sector to other sectors is, of course, essential to all questions concerning the size of the government sector. The institutional sector definition is a constitutive part of ESA 95 and subject to ongoing clarification and specification by Eurostat, esp. concerning borderline areas (see ESA 95 manual, 2002).

Sector definition according to ESA 95 (in Austria)

Under ESA 95, the institutional sectors are:

- **Non-financial corporations** (S.11): institutional units (independent, private or public legal entities of any size, of any legal status, etc.) which are market producers (i.e. respecting the 50 % criterion, see ESA 95 paragraphs 3.31, 3.32 and 3.37) and whose principal activity is the production of goods and non-financial services. In Austria, this sector comprises non-financial corporations and quasi-corporations which are either public, national private or foreign controlled including companies of all market producing industries either in the form of non-incorporated or incorporated enterprises, furthermore public enterprises);
- **Financial corporations** (S.12): institutional units which are principally engaged in financial intermediation and/or in auxiliary financial activities (in Austria banks, mutal funds, corporations engaged in financial leasing and factoring, insurance and pension companies);
- **General government** (S.13): public, non-market institutional units (mainly general government entities providing non-market goods and services and non-profit institutions controlled and mainly financed by general government; see below);
- **Households** (S.14): individuals or groups of individuals whose principal function is consumption, and non-profit institutions serving households, as well as **Non-profit institutions serving households** (S.15): in Austria mainly private foundations, the Catholic Church and trade unions;
- **Rest of the world** (S.2).

Definition of general government (in Austria)

Basically, decisions regarding the sectoral assignment of units must be taken at the level of institutional units, defined in the system as units having autonomy of decision and a complete set of accounts. Producers that are not institutional units must be classified in the institutional sector to which the unit which controls them belongs. Therefore, public producers not recognised as independent legal entities are to be included in the general government sector except if they can be recognised as quasi-corporations (ESA 95 manual, 2002, p. 9)

According to ESA 95, paragraph 2.68, the sector "general government" includes all institutional units which are

- other non-market producers (institutional units whose sales do not cover more than 50% of the production costs, see ESA 95 paragraph 3.26), and
- which are controlled by general government or whose output is intended for individual and collective consumption, and mainly financed by compulsory payments made by units belonging to other sectors and/or all institutional units principally engaged in the redistribution of national income and wealth.

According to ESA 95, the general government sector comprises four sub-sectors: a) central government, b) state government, c) local government and d) social security funds. In Austria, the definition of the general government sub-sectors put into practice by Statistik Austria is as follows:

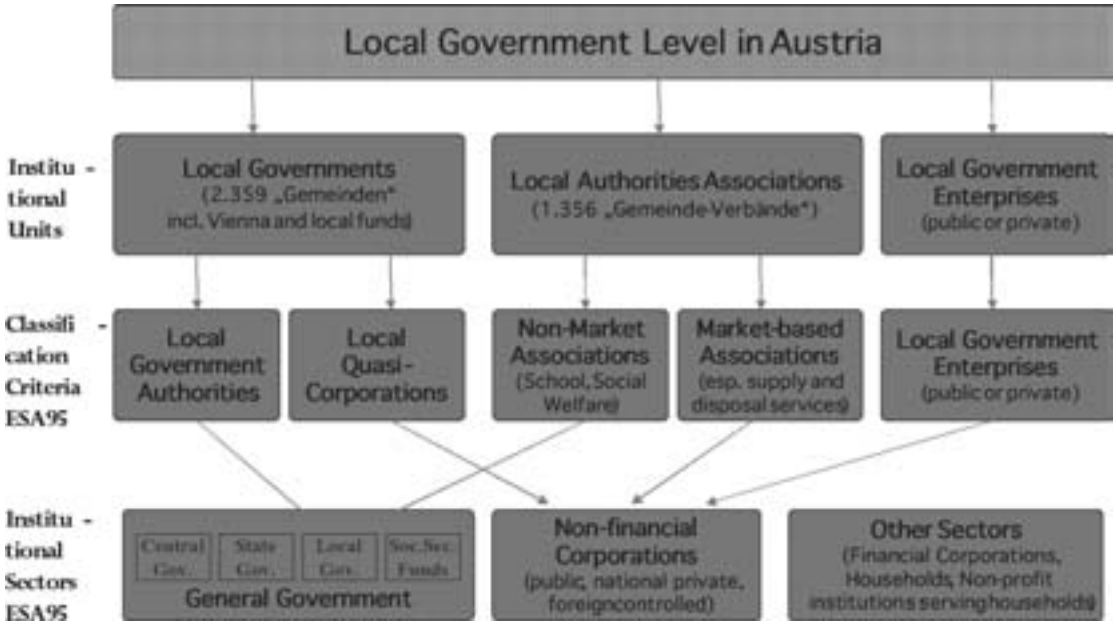
- **Central Government** (sub-sector S.1311): Federal Government and miscellaneous public sector authorities such as schools of higher education, various federal funds for public activities, various federal chambers for the coordination of certain types of professionals and industries ("Bundeskammern"), Diplomatic Academy in Vienna,
- **State Government** (sub-sector S.1312): Federal Provinces ("Länder" except Vienna), provincial funds for public activities, provincial chambers for the co-ordination of certain types of professionals and industries ("Länderkammern"),
- **Local Government** (sub-sector S.1313): local government authorities (incl. Vienna which is both federal province and local government), local authorities associations (non-market), as well as local based funds of public activities,
- **Social security funds** (sub-sector S.1314): all domestic social security funds for employees, self-employed persons, retired persons and employees working within the government sector.

The local general government sub-sector in Austria

On the local government level in Austria there are three groups of institutional units forming the local government sub-sector: 2.359 local governments ("Gemeinden"), 1.356 local authorities' associations ("Gemeinde-Verbände") and a number of local government enterprises which have not been reported empirically to Statistik Austria and thus are not available (Figure 1). Every single unit of the local governments has to be subdivided to enable the re-classification according to ESA 95 whose effects are studied empirically in this article. This subdivision results in four local government entities: local government authorities and local quasi-corporations, on the one hand, and non-market associations and market-based associations of local authorities, on the other. Taking into consideration local government enterprises also leads finally to five local government entities which are re-classified in order to form the institutional sectors according to ESA 95: general government (to which local government authorities and non-market-associations belong), non-financial corporations (to which local quasi-corporations and market-based associations as well as local government enterprises belong) and other sectors.

In order to classify a local entity inside the general government according to the above mentioned institutional definition of ESA 95, it is necessary to determine if it is 1. an institutional unit, 2. a public institutional unit and 3. a public non-market institutional unit. The corresponding criteria for the classification of the five local government entities in Austria are shown in Table 1.

Figure 1: Definition of the local government sub-sector in Austria (2001)



Source: Authors' own draft, 2003.

Table 1: Classification of the local government entities (in Austria)

	Local government authorities	Local quasi-corporations	Non-market local authorities associations	Market-based local authorities associations	Local government enterprises
1. Institutional Unit?					
Autonomy of decision with regard to its principal function	yes	(yes) [1)]	yes	yes	yes
Complete set of accounts	yes	yes [2)]	yes	yes	yes
2. Private or public?					
Controlled by general government [3)]	yes	yes	yes	(yes) [3)]	(yes) [3)]
Mainly financed by compulsory payments and/or engaged in the redistribution of national income and wealth	yes	no	yes	No	no
3. Market or other non-market producer?					
Non-market activity (sales cover less than 50 % of the production costs)	yes	no	yes	No	no
Assignment to sub-sector according to ESA 95	S.1313	S.11	S.1313	S.11	S.11

1) Local quasi-corporations have no independent legal status. However, they have an economic and financial behaviour that is different from that of their owners and similar to that of corporations. Therefore they are deemed to have autonomy of decision and are considered as distinct institutional units.
2) In order to be said to keep a complete set of accounts, a unit must keep accounting records covering all its economic and financial transactions carried out during the accounting period, as well as a balance sheet of assets and liabilities. In Austria, accounting records of local quasi-corporations are contained in the budgets of local government authorities.
3) Control is defined as the ability to determine general (corporate) policy or programme of an institutional unit appointing appropriate directors or managers, if necessary (probably "yes" in most cases, but no representative inquiry available to the authors).

Source: ESA 95 Manual; 2002, pp. 9-16; authors' own draft, 2003.

In 1997, the budgetary law for local governments, federal provinces and (certain) local associations (VRV 1997) was adjusted to meet the requirements of ESA 95, especially concerning sector definition. The main adaptation was the introduction of new institutional classification codes which allow a complete identification of market-based operational units which fulfil the criteria of local quasi-corporations within the local government budget. These areas comprise water supply, waste water disposal, refuse disposal services as well as the administration of residential buildings and business premises. In the following years, this led to a major shift of activities from the general government sector to the non-financial corporation sector, which is analyzed in this paper.

Table 2 shows the main functions of the different local government entities in Austria. It has to be mentioned that these functions of local government entities differ in the federal provinces because of different provincial legal regulations.

Table 2: Functions of the local government entities in Austria

Local government authorities	Local quasi-corporations	Non-market local authorities associations	Market-based local authorities associations	Local government enterprises
general administration, lower and primary education schools, basic social welfare, hospitals, local roads, civil security, local sports facilities and cultural activities	water supply, waste water disposal, refuse disposal services, administration of residential buildings and business premises, agricultural and forestry companies, other market services	local associations for lower and primary education schools (incl. music schools); until 2001: local associations for social welfare	local associations for water supply, waste water disposal, refuse disposal services, health, public transport, foster home, residential home for the elderly	water supply, waste water disposal, refuse disposal services, public transport

Source: VRV 1997; Thöni, et al., 2002, p. 49; Gebarungsübersichten 2001; authors' own compilation, 2003.

3. The Size of the Local Government Sub-sector in Austria

This paper wants to highlight the effects of a re-assignment of activities at the borderline between public and private sphere on the size of the local government sub-sector in Austria. The empirical presentation for the case of Austria concentrates on the budgetary volumes of the five local government entities for the years 1995-2001. On account of data availability the focus is on the figures for 2001 of local government authorities and local quasi-corporations.

Empirical budgetary data on local general government entities in Austria

The following tables and figures are based on budgetary data published by the national statistical office of Austria (Statistik Austria). For the local government sector, the data are derived directly from the units of the local government entities (Table 3).

Up to 1999 only aggregate figures of local government entities have been recorded. Since 2000, an electronic system has been set up to collect annually detailed data on budgeted and closed accounts as well as debt and asset accounts from all local government administrations by Statistik Austria. These data are the main source for the various financial statistics.[1] As the accounts of local quasi-corporations are contained in the budgets of local governments, budgetary figures on these are henceforth available in adequate functional and economic detail. The collecting system contains also qualitative information on which activities are outsourced. The number of employees of local government authorities is recorded only in total (by some administrative categories). The number of employees assigned to quasi-corporations is thus not available.2

Furthermore, data are collected from all units of local authorities associations (since 2001 in adequate detail). It has to be mentioned here that the number of (non-market) local authorities associations from which data are collected continuously has been extended since 1997.

For local government enterprises, only aggregate data have been collected until now from local government administration (revenue and expenditure as well as number of employees in total for all public enterprises per municipality). However, the data are weak, especially incomplete because accounting data are not at all available to local government administration, or not in time (data are no longer published by Statistik Austria since 2000).

[1] Besides national statistics on public finances these administrative data are compiled and transformed in order to comply with ESA for excessive deficit procedure, financial accounts, quarterly financial and non-financial accounts, government finance statistics, table on financing and investment, balance of payment and international investment position statistics.

Table 3: Available data sources on the local government finances in Austria

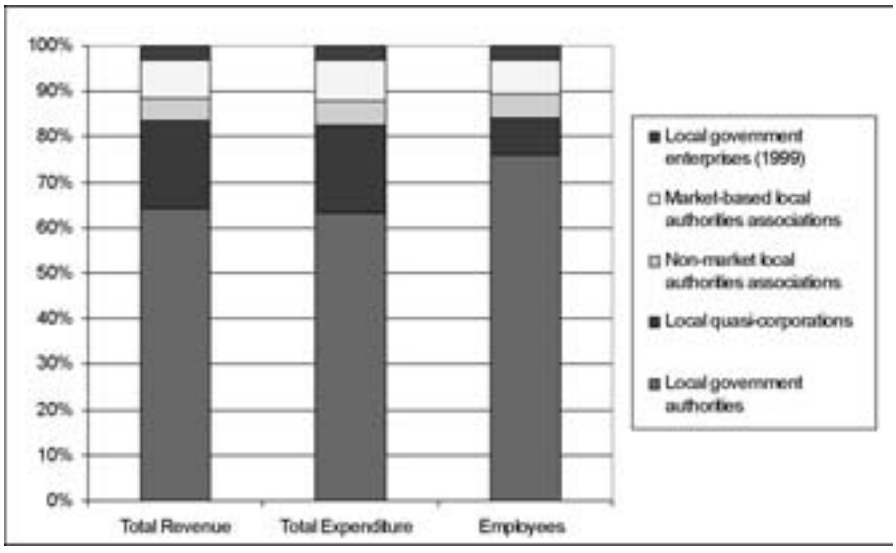
Data	Local government authorities	Local quasi-corporations	Non-market local authorities associations	Market-based local authorities associations	Local government enterprises
Data on budgets	Until 1999: aggregate budget figures; Since 2000: detailed budget, asset and debt accounts of all local government authorities available	Until 2000: total figures; Since 2001: detailed budget, asset and debt accounts Financial data part of local government budget	Until 2000: aggregate budget figures; Since 2001: detailed data available	Detailed data available for an increasing number of local authorities associations since 1997	No data available (total figures until 1999, but poor data quality)
Data on employees	Total Number of employees incl. quasi-corp. (collection of data by detailed functions in preparation, planned for 2005)	Not available (data collection in preparation, planned for 2005)	Total number of employees for each unit	Total number of employees for each unit	No data available (Total number of employees until 1999, but poor data quality)

Source: Gebarungsübersichten 1999/2001; authors' own compilation, 2003.

Total revenue and expenditure of local government entities in Austria

Although the total number of local government enterprises is not known empirical data regarding revenue and expenditure of a part of the enterprises (how many is also unknown) are available for the year up to 1999. From the total revenue of the local government entities amounting to € 16,925 Mio. 64.1 % are obtained by local government authorities, 19.2 % by local quasi-corporations, 5.3 % by non-market local authorities' associations, 8.3 % by market-based local authorities and 3.0 % by local government enterprises. The respective shares of expenditure are very similar. On the contrary, from the total of 96,226 employees of the local government entities 76 % belong to local government authorities and only approx. 8 % to local quasi-corporations; the shares of the other local government entities are very similar to their shares of the financial flows (revenue and expenditure) (Figure 2).

Figure 2: Total revenue, total expenditure and employees 2001 of local government entities in Austria



[2] A major revision of the collecting system is planned for 2005 which includes collection of employees for the different local government entities classified according to detailed functions/activities. However, functional assignment of employees is not only a problem of data provision but remains a practical problem in administrative systems, too.

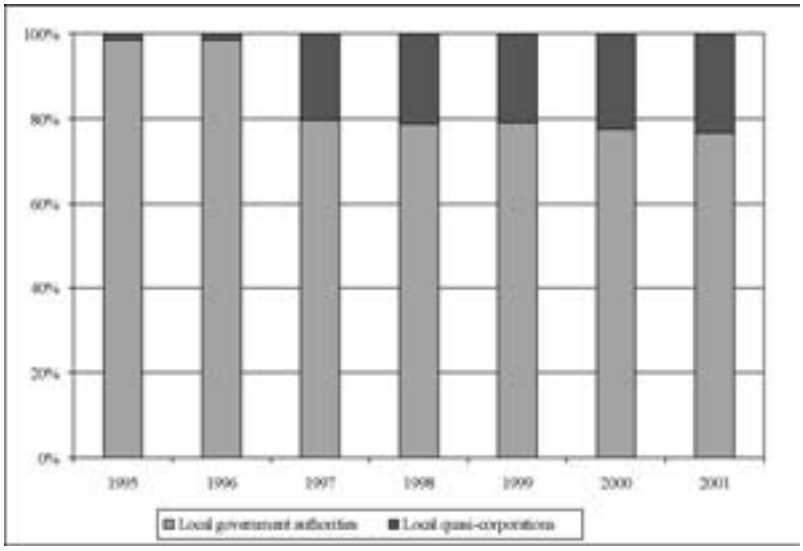
Mio. Euro, %-share of total	Total Revenue	%	Total Expenditure	%	Employees [2)]	%
Local government authorities	10,855	64.1	10,587	63.2	*73,112*	76.0
Local quasi-corporations	3,258	19.2	3,218	19.2	*7,764*	8.1
Non-market local authorities associations	890	5.3	885	5.3	5,074	5.3
Market-based local authorities associations	1,412	8.3	1,509	9.0	7,185	7.5
Local government enterprises (1999) 1)	*510*	*3.0*	*541*	*3.2*	*3,091*	*3.2*
Total	16,925	100.0	16,740	100.0	96,226	100.0

1) Total budgetary figures and number of employees of local government enterprises are only available until 1999. Quality of this data has to be characterized as poor, i. e. incomplete, because data are either partially not available or delivered in time even to the respective local government administration. The data are further collected but not published any more by Statistik Austria since 2000.
2) Only the total number of employees of local government administration is recorded empirically. The number of employees of local quasi-corporations was estimated based on shares of wages and salaries.

Source: Kommunale Finanzstatistik 1999/2001; authors' own calculations, 2003.

It was in the year 1997 when the most important effect of ESA 95 rules on the size of the local government sector occurred: The share of the local quasi-corporations from the total expenditure of local government authorities and local quasi-corporations together (defined as "local governments" according to the definitions *before* ESA 95 came into operation) leapt from less than 2 % in the years 1995 and 1996 to more than 20 % in the year 1997, and then grew ever since to 23.3 % in the year 2001. Correspondingly, the local authorities' expenditure share dropped from more than 98 % to less than 80 % (Figure 3), inducing a lower level of corresponding shares of the local governments sub-sector and, consequently, of the general government as institutional sector according to ESA 95.

Figure 3: Shares of total expenditure of local government authorities and local quasi-corporations in Austria 1995-2001



	1995	1996	1997	1998	1999	2000	2001
Local government authorities	98.5	98.4	79.7	78.7	79.0	77.4	76.7
Local quasi-corporations	1.5	1.6	20.3	21.3	21.0	22.6	23.3

Source: Kommunale Finanzstatistik 1995-2001; authors' own calculations, 2003.

4. Economic Structure of Expenditure of the Local Government Sub-sector in Austria

In the year 2001, total expenditure of local governments according to the definitions *before* ESA 95 came into operation(local government authorities and local quasi-corporations together) amounted to € 12,693 Mio, of which 23.4 % were expenditure of local quasi-corporations and 76.6 % expenditure of local government authorities. Interestingly, several economic categories of expenditure deviate strongly from this distribution:

Firstly, gross capital formation of local quasi-corporations amounted to 42.0 % of total gross capital formation of local governments (Table 4). This indicates the central role of gross capital formation within the budget of local quasi-corporations. From 1996 to 1997 this share leapt from 3.2 % to 30.8 % (as an effect of applying ESA 95 rules) and increased ever since (Figure 4).3

An even higher share can be observed when it comes to interest paid: 63.4 % of interest paid by local governments were interest paid by local quasi-corporations. Similarly, debt redemption by local quasi-corporations amount to 50.3 % of total debt redemption by local governments (Table 4). Both levels of expenditure are related directly with financing gross capital formation by a high level of borrowings.

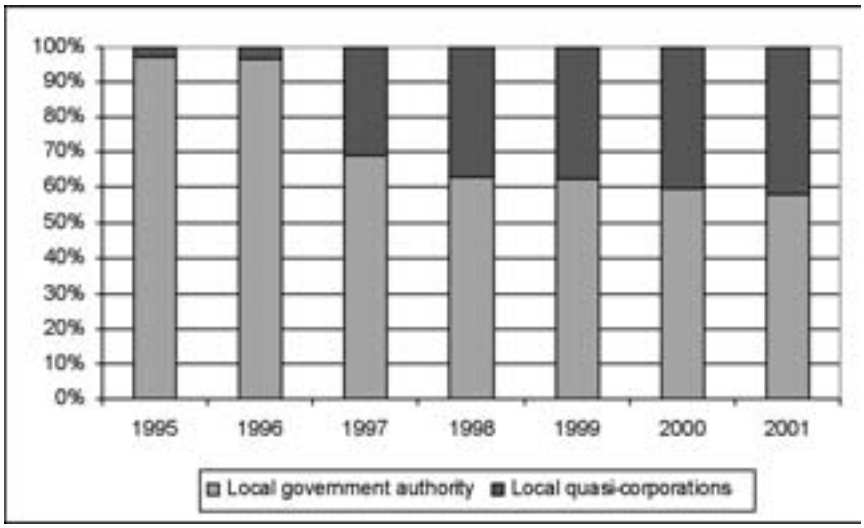
Table 4: Economic structure of expenditure of local government authorities (excl. Vienna) and quasi-corporations in Austria 2001

	Total	Local gov. Authorities		Local quasi-corporations	
	Mio. €	Mio. €	% of total	Mio. €	% of total
Expenditure of current account					
Compensation of employees	2,595	2,309	89.0	285	11.0
Current expenses for goods and services (Intermediate consumption)	3,045	2,335	76.7	709	**23.3**
Interest	377	138	36.6	239	**63.4**
Intra-governmental transfers (paid to general government)	1,904	1,775	93.2	129	6.8
Extra-governmental transfers (paid to other sectors)	877	765	87.2	112	12.8
Allocations/withdrawals to/from income of quasi-corporations	47	0	0.2	47	99.8
Total current expenditure	*8,844*	*7,323*	*82.8*	*1,522*	*17.2*
Expenditure of non-financial capital account					
Gross capital formation	2,146	1,244	58.0	902	**42.0**
Capital transfers (paid to general government)	113	70	61.9	43	38.1
Capital transfers (paid to other sectors)	244	213	87.2	31	12.8
Total of non-financial capital account	*2,504*	*1,527*	*61.0*	*977*	*39.0*
Expenditure of current and non-financial capital account	11,348	8,850	78.0	2,498	22.0
Expenditure of financial capital account					
Acquisition of financial assets (shares)	103	97	94.4	6	5.6
Granting of loans	38	34	90.5	4	9.5
Debt redemption	671	334	49.7	337	**50.3**
Formation of reserves	430	315	73.2	115	26.8
Investment and debt redemption grants between loc. gov. and quasi-corp.	103	93	90.0	10	10.0
Total of financial capital account	*1,345*	*873*	*64.9*	*472*	*35.1*
Total expenditure	12,693	9,723	76.6	2,970	23.4

Source: Gebarungsübersichten 2001; authors' own calculations, 2003.

[3] It has to be noticed that there is not only a shift of investment from local government authorities to local quasi-corporations but also a decrease of the total investment. This may be attributed to a shift to (private or public) local enterprises and the pressure of the European Stability and Growth Pact and the Austria Stability Pact (2001).

Figure 4: Investment of local government authorities and local quasi-corporations in Austria 1995-2001



	Total	Local Government Authorities		Local Quasi-corporations[1)]	
	Mio. €	Mio. €	*% of total*	Mio. €	*% of total*
1995	2,602	2,524	*97.0*	78	*3.0*
1996	2,524	2,443	*96.8*	81	*3.2*
1997	2,652	1,835	***69.2***	817	***30.8***
1998	2,613	1,652	*63.2*	961	*36.8*
1999	2,613	1,638	*62.7*	975	*37.3*
2000	2,226	1,327	*59.6*	899	*40.4*
2001	2,146	1,245	***58.0***	901	***42.0***
%-change 1997-2001	***-19.1***	***-32.2***		***10.4***	

1) For the years 1997-1999 the share of investment of local quasi-corporations is based on a sample of 20 % (1997) to 50 % (1999) of the local governments.

Source: Gebarungsübersichten 2001; authors' own calculations, 2003.

5. Economic Structure of Revenue of the Local Government Sub-sector in Austria

In the year 2001, total revenue of local governments according to the definitions *before* ESA 95 (local government authorities and local quasi-corporations together) amounted to € 12,766 Mio, of which 22.5 % were revenue of local quasi-corporations and 77.5 % revenue of local government authorities (Table 5). As at the expenditure side of the budget, several economic categories of revenue deviate strongly from this distribution: First, current revenue for goods and services produced (for market and non-market output) of local quasi-corporations amounted to 53.7 % of current revenue for goods and services produced of local governments altogether. This indicates the central role of service production by local quasi-corporations. Interestingly, this service production seems to be based to a lesser degree on labour input than on capital input: Compensation of employees by local quasi-corporation are only 11.0 % of compensation of employees by local governments in total (Table 4), while gross capital formation (constituting the economic base of capital depreciation) amounts to 42.0 % of total gross capital formation by local governments.

An even higher share can be observed when it comes to revenue from borrowings: 67.2 % of borrowings by all local governments were borrowings by local quasi-corporations. The high empirical value of this revenue category is related directly with the above mentioned financing of gross capital formation by a high level of borrowings. This relationships cannot be proven by taking into consideration only budget figures and, moreover, only for one year. But because of the outstanding differences between the shares of the categories mentioned this judgment seems to be fairly justified.

Table 5: Economic structure of revenue of local government authorities (excl. Vienna) and quasi-corporations in Austria 2001

	Total Mio. €	Local gov. authorities Mio. €	% of total	Local quasi-corporations Mio. €	% of total
Revenue of current account					
Current revenues for goods and services produced (for market & non-market outputs)	2,407	1,114	46.3	1,293	**53.7**
Property income (rent, interest etc.)	779	505	64.8	274	**35.2**
Current Taxes receivable (on production, income, wealth etc.)	6,177	6,031	97.6	146	2.4
Intra-governmental Transfers (received from general government)	681	536	78.7	145	21.3
Intra-governmental Transfers (received from other sectors)	125	110	87.8	15	12.2
Withdrawals from income of quasi-corporations	104	66	63.5	38	36.5
Total current revenue	*10,273*	*8,362*	*81.4*	*1,912*	*18.6*
Revenues of non-financial capital account					
Disposal of non-financial non-produced assets	221	192	86.7	29	13.3
Capital transfers (received from general government)	752	593	78.9	159	21.1
Capital transfers (received from other sectors)	44	31	70.4	13	**29.6**
Total of non-financial capital account	1,017	816	80.2	201	**19.8**
Total of current and non-financial capital account	11,291	9,178	81.3	2,113	**18.7**
Revenues of financial capital account					
Disposal of financial assets (shares)	137	136	99.5	1	0.5
Repayment of loans	28	26	94.3	2	5.7
Borrowings	896	294	32.8	602	**67.2**
Reduction of reserves	316	225	71.3	91	28.7
Investment and debt redemption grants between loc. gov. and quasi-corp.	98	28	28.7	70	71.3
Total of financial capital account	*1,476*	*710*	*48.1*	*765*	*51.9*
Total revenues	12,766	9,888	77.5	2,878	22.5

Source: Gebarungsübersichten 2001; authors' own calculations, 2003.

6. Surplus/Deficit and Debt of the Local Government Sub-sector in Austria

Local quasi-corporations have a much higher relative surplus of current account (net saving) than local government authorities, namely 20.4 vs. 12.4 % of current revenue (Table 6). The reasons are primarily that labour input and, consequently, compensation of employees as well as current expenses for goods and services (intermediate consumption) are relatively much lower and current revenues for goods and services produced are relatively higher in local quasi-corporations than in local government authorities. It is remarkable that this is the case although property income (rent, interest etc.) and revenue from current taxes as well as intra-governmental transfer payments (from general government or other sectors) and withdrawal from income of quasi-corporations by local government authorities are much higher than in local quasi corporations. The reason for this absence of a significant effect is that these revenues are "neutralised" by spending relatively high amounts of money for transfer payments (Table 4).

The high surplus of the current account (net saving) of local quasi-corporations mentioned above is the economic origin of their ability to use financial resources either to finalise financing procedures begun in former periods (raising debts in order to finance investment) or to finance investment out of own financial means during the current period. Now, to finalise financing procedures begun in former periods, it requires the amortisation of a debt. If the surplus of the current account is reduced by the amount of debt redemption the surplus of current account of local quasi-corporations will be reduced to 2.8 % which is considerably lower than that of the local government authorities (8.4 %).

Table 6: Surplus / deficit figures of local government authorities (excl. Vienna) and quasi-corporations in Austria 2001

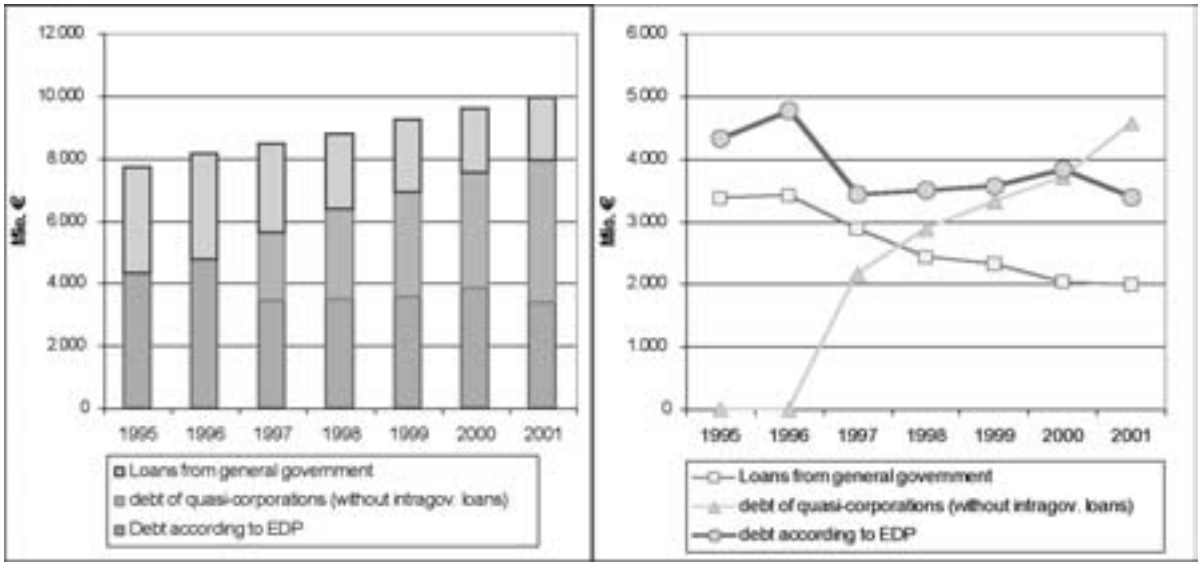
	Total Mio. €	Local gov. authorities Mio. €	% of GDP	Local quasi-corporations Mio. €	% of GDP
Surplus / deficit of current account (net saving)	1,429	1,039		**390**	
% of current revenue	*13.9*	*12.4*		***20.4***	
Surplus / deficit of current account less debt redemption	758	705		**53**	
% of current revenue	*7.4*	*8.4*		***2.8***	
Surplus / deficit of non-financial capital account	-1,486	-711		-775	
Surplus / deficit of total non-financial account	-57	328	*0.15*	-385	*-0.18*
Surplus / deficit of total account	74	165		-92	
Net lending (+) / net borrowing (-) (Maastricht-surplus/deficit) 1)		**236**	*0.11*		

1) Surplus / deficit of total non-financial account of local government authorities (328 Mio. €) plus surplus / deficit of total account of local quasi-corporations (-92 Mio. €, which according to ESA 95 corresponds to a grant). The result does not include some further adjustments of Maastricht-surplus/deficit which lead to a final result of 219 Mio. € for the local government authorities excl. Vienna (see Table 7).

Source: Gebarungsübersichten 2001; authors' own calculations, 2003.

1997 is the year in which not only investment of local quasi-corporations leapt to a high level but also their debt (most corporations were formed in that year). Debts of quasi-corporation went up from practically zero (1996) to € 2,167 Mio. (1997) and then further up to € 4,582 Mio. This was equivalent to a simultaneous decrease of the debt of the local government authorities. At the same time loans issued by general government were reduced (Figure 5). Of course, also this change in the structure of debt was an effect of ESA 95, which was the *formation* of most of the quasi-corporations existing today. Despite this change of the composition of debts of local governments the growth of the sum of all three kinds of debt was, on a moderate level, more or less uniformly continuous. But the total level of debts of local governments lost its former relevance. Introducing local quasi-corporations was a consequence of the idea that they are not a part of public but of private resource allocation, having enough similarity with non-financial corporations to be a part of them. This effect was practically a kind of "outsourcing" debts of local governments and assigning them to operative units being better equipped to handle debt financing of gross capital formation thanks to higher current revenue for goods and services produced. By this change of view it appears to be justified to eliminate the debt of local quasi-corporations from the former total debt local governments, thus reducing the operative volume of the "State" relative to that of corporations and other institutional sectors (households and non-profit institutions serving households).

Figure 5: Debt1) of local government authorities (excl. Vienna) and local quasi-corporations in Austria 1995-2001



Mio. Euro	1995	1996	1997	1998	1999	2000	2001
debt according to EDP	4,334	4,776	3,435	3,492	3,578	3,846	3,380
debt of quasi-corporations (without intragov. loans)	0	0	2,167	2,886	3,321	3,713	4,582
Loans from general government	3,379	3,405	2,888	2,421	2,322	2,035	1,978

1) Public debt of local government authorities according to EDP (Excessive Deficit Procedure) based on Council Regulation (EC) No. 475/2000; debt of local quasi-corporations and loans of local government from general government.

Source: Statistik Austria (Maastricht notification, Aug. 2003); authors' own calculations, 2003.

7. Surplus/Deficit and Debt of General Government Sector in Austria

The effect of ESA 95 and legally bound regulations on the process of budgetary consolidation of general government was considerable. Table 7 shows an impressive path of consolidation of the total budget of the general government, in particular from the year 1995 to 1997 and from 2000 to 2001, which led from € -8,895 Mio. (-5.2 % of GDP) in 1995 to a surplus, for the first time, amounting to € 567 Mio. (0.3 % of GDP) in 2001. The contribution of the local government subsector to that surplus amounted to € 555 Mio.

In order to consider the empirical relevance of ESA 95-effects induced by re-classification of entities previously assigned to local governments, the surplus/deficit of total non-financial accounts of local quasi-corporations can be related to that of general government: The surplus of general government (€ 567 Mio. in 2001) would have been decreased by € 385 Mio. (see Table 6) to € 182 Mio. (assuming the former assignment were valid). The surplus/deficit of general government as a percentage of GDP would have been 0.1 % instead of actually 0.3 %.

Because of re-assignment of local quasi-corporations from local governments to non-financial corporations in the period 1997 to 2001, the debt of the general government rose from € 118,139 Mio. to € 142,659 (instead of rising to € 147,241 Mio. assuming the former rules were valid). The debt of the general government as percentage of GDP was 67.3 % (instead of 69.5 %).

Of course, similar ESA 95-induced effects of borderline cases inside and outside general government exist on the level of the central and state government sub-sectors which are of major importance but which are not analyzed in this paper.

Table 7: General government deficit / surplus in Austria by sub-sectors 1995-2001

Mio. €, % of GDP	1995	1996	1997	1998	1999	2000	2001
General government	-8,895	-6,812	-3,396	-4,514	-4,459	-3,042	567
% of GDP	*-5.2*	*-3.8*	*-1.9*	*-2.4*	*-2.3*	*-1.5*	*0.3*
GDP	*172.287*	*178.045*	*182.486*	*190.628*	*197.154*	*207.037*	*211.857*
Central government	-8,115	-7,193	-5,219	-5,794	-4,915	-3,364	-1,113
State government	155	481	1,040	832	524	475	1,135
Social security funds	-103	142	310	176	-43	-231	-11
Local government	**-844**	**-249**	**474**	**272**	**-25**	**77**	**555**
Local government, of which							
Loc. gov. (excl. Vienna)				145	-121	-75	219
Vienna				131	112	196	344
Local funds				0	8	-8	-7
Local auth. associations				-4	-24	-36	-1

Source: Statistik Austria (Maastricht notification, Aug. 2003); authors' own calculations, 2003.

Table 8: Public Debt[1] by sub-sectors of general government in Austria 1995-2001

Mio. Euro, %	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
General government	119,207	123,022	118,139	123,626	133,048	138,394	142,659
% of GDP	*69.2*	*69.1*	*64.7*	*64.9*	*67.5*	*66.8*	*67.3*
Central government	105,028	108,401	106,511	112,326	121,882	126,665	129,833
State government	5,484	5,462	5,116	4,987	4,901	5,153	6,622
Social security funds	673	766	671	576	683	913	960
Local government	8,023	8,394	5,841	5,737	5,582	5,664	5,244
% of general government	*6.7*	*6.8*	*4.9*	*4.6*	*4.2*	*4.1*	*3.7*
Local government, of which							
Loc. gov. auth. (excl. Vienna)	4,334	4,776	3,435	3,492	3,578	3,846	3,380
Vienna	3,677	3,598	2,396	2,216	1,972	1,786	1,831
Local funds	12	19	11	28	32	32	33

1) Government debt according to Council Regulation (EC) No. 475/2000 (total gross debt at nominal value at the end of the year of the (sub-)sector(s) of general government with the exception of those liabilities the corresponding financial assets of which are held by the general government sector).

Source: Statistik Austria (Maastricht notification, Aug. 2003); authors' own calculations, 2003.

8. Conclusions

In this paper, the effects of ESA 95 on the size of the local government sub-sector in Austria have been studied empirically based on budgetary volumes. In particular, revenue and expenditure (in total and differentiated economically) of local government authorities and local quasi-corporations, which are assigned to the non-financial corporation sector, were analyzed for the years 1995-2001 with focus on 2001.

It was shown that institutional re-assignment of borderline cases (based on ESA 95 criteria) is of considerable importance concerning changes in budgetary volumes over time and concerning effects on relevant figures like government deficit and debt – despite the minor weight of the local government sub-sector compared to central and state government.

On the one hand, it is an indispensable practical requirement to draw strict borderlines between the different sectors based on elaborated, operational criteria for sector assignment of institutional units, in order to obtain reliable and comparable statistics. On the other hand, reporting standards should reflect the difficulties in sector definition (as well as accounting rules) within a scope of discretion, e.g. by systematic documentation of borderline activities, to account for the various measurement aspects of the size of the government sector from different analytical points of view.

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Economic and Political Transition: An Interpretation of the Size of the Government

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All opinions are of the author, and not necessarily of the Ministry of Finance or other Hungarian authorities.

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Contents

I. Institutional aspects of transition

1. Economic-historical background

In the course of state-dominant economy there was no need to make distinction between market mechanisms simulated by state regulation and traditional state tasks in market economy. The state was self-authorised with

unlimited intervention in any segment of the economy. In central-planning system microeconomic decisions were born on macroeconomic level, implementation of them was also directed and controlled by the Centrum. There was no difference made between statistics and business-accounting, and budget-accounting had no special importance as a management function.

The famous Hungarian economic management reform in 1968 announced encouraging market-type relations not only in enterprise sector and central level of economic management, but also in modernisation public finances. From 1968 the status of budgetary institutions with legal personality has no longer been formal one, superseding the concept of one-and-non-separable state. Following the general accounting rules, accrual-base double-entry accounting and reporting system was introduced for the central budgetary institutions to register economic and financial flows. These kind of information were utilised mainly in budget bargain between the budgetary institution and its supervisor ministry. The Parliament has no view of size and situation of subsector of budgetary institution.

The Law on State Finances, II/1979, the first highest level regulation on public finances, crystallised good practices of 1968 reform-elements, such as increasing independence in managing the budget on institutional level, enhancing interest in charging services and use of resources effectively.

Meanwhile, the national budget and final accounts presented to the Parliament between end of 50ths and end of 80ths were very slim (aggregated and laconic), we can appreciate afterwards the stable structure of few summary tables, that makes any comparison possible at all. Can you imagine, that 1986 was the first year, when the Parliament formally voted on the aggregates of budget revenues and expenditures forming a balance sheet? Prior to this milestone, no parliamentary vote served determination of subsidies to companies, transfers to households, capital expenditures.

2. Period of economic and political transition

Public finance developments of transition started with transformation of revenue-side of the budget (by introduction of personal and corporate income tax, value-added tax, re-regulation of consumption and local taxes, duties, and taxation), and followed by the concept of new Public Finance Law in December 1989. Parallel with just-then-shaping new socio-economic model of democracy and market economy, a simultaneous «front-office» and «back-office» public finance reform was put on the agenda.

Proposed «front-office reform» covered the structural alignment with socio-economic transition in scope and size of state tasks, re-regulation the basic principles of the relationship between state and citizens and all institutional sectors. The budget sector reform sketched out guidelines for most of main branches of budgetary sector – such as education, social protection, health care, defence, police – to transform. The concept of the reform promised budget transfer to civil initiatives and autonomous non-profit organisations to complete or broaden the spectrum of public services. Churches, non-profit units and business were entitled to take over public services by give-up former state monopoly.

Proposed «back-office reform» included modernisation of: operation and financial management of the government, the scope and financing techniques of the budget, the whole budgeting process, centralisation-decentralisation of budget decision, and also improvement of budget implementation, control and audit. Instead of state-discretionary «donation» the concept preferred entitlement-based and even sector-neutral budget transfers where appropriate. Importance of economic autonomy was emphasised again, both in choosing the optimal input-mix and the way of organising and producing public services.

The Hungarian Parliament accepted the above-described reform-concept in July 1989. The right of Parliament for approval budget and implementation of the budget was incorporated in the Constitution in November 1989. In the same year the social security system was separated from the central budget by forming two funds – for pensions and health care – considering a future self-governing model, that actually was introduced later in 1991. The State Audit Office responsible for Parliament was established in 1989. The reform concept stressed the immediate separation state power authorisation from state ownership rights, thus the Parliament established the State Property Management Agency as budgetary unit to exercise state ownership rights and start the privatisation process. The Law on National Bank of Hungary, approved in 1991, laid down guarantees of independence from any government and anytime budget, and relieved central bank of former commercial banking function. In the same year, the law on financial institutions and banking activities came into force, with a high degree of correspondence to be authorised for banking activities. Illustrating the extension of the transition, an-

other fundamental step of transition was taken by Accounting Law, in 1990. It provides unified rules of accounting and reporting for all institutional sectors, but authorised the Government to regulate – within the frame of the law – those for the budgetary sector respecting for its specialities.

Although the Budget Bill 1990 was elaborated within the frame of old law on state finances, it had brand-new elements. Budget transfers were earmarked for non-government organisations to promote their social and educational services. The Bill put down the principles of fiscal relationship between central and local level of governments by identifying own-revenues of local governments and titles and forms of entitlements for budget transfer. Huge number of normative types of budget transfer helped to allocate budget resources to local self-governments that were just then replacing the former local authorities. Ministers, other chapter-heads introduced all central budgetary units to the Parliament – for the first time in post-war history – with a description of «messages» and actual activities and key budget aggregates for each of them. The Final Account Law 1989 included the statement of revenues and expenditures of the whole-government sector, covering central budget, social security funds and local governments as subsectors. The Budget Bill 1991 was submitted to the Parliament in a new structure based on the new organisational arrangements of government and public administration, forming budget chapters for state and jurisdictional organs, ministries and autonomous organs: like National Academy of Science, Central Statistical Office, Economic Competition Office. Within the chapters the budgetary units composed titles or subtitles in the budget individually or by grouping, reflecting fiscal responsibilities. The former budget decisions – on few aggregates – were replaced a very detailed list of appropriations to be voted, turning back to Hungarian traditions in budgeting before the World War II. Opening the «budget book» let to know the details advanced the budget-debate and made them modifiable. This presentation of budget appropriations could serve the process of scrutinising, modifying and completing the coverage of the budget for many years in the process of transition. The parliamentary committees were the main forums of extended dispute on budget appropriations, supported by the State Audit Office and independent advisors as well. Changing appropriations were accompanied by organisational changes. In these years the Parliament took over some parts of budgeting functions from government.

In 1991 and 1992 temporary fiscal rules came into force as the old-fashioned ones could not operate in transition period of budgeting.

3. Re-regulation of public finances in 1992

During a one-and-a-half-year dispute on the draft on public finances in the Parliament, political consensus was expected on an explicit list of government functions (as the COFOG nomenclature includes them) in order to identify the administrative and financial presence of the government within a democratic and market-oriented environment. Compared to this intention, a pragmatic standpoint overcame by considering high risk from fixing a prompt list, in lack of elaborated and politically supported socio-economic idea and prospects for the future. As a consequence, the legislation concentrated on «back-office reform» and implemented most of the elements that were included in the reform-concept.

The Public Finance Law defined the government sector on institutional-base and by listing the possible types of revenues and expenditures theoretically established a framework and platform to serve future «front-office reforms». The central budget, the extrabudgetary funds and the social security funds form the subsectors of the central level of government, and fourth one is the local government subsector. The category of government unit includes not only budgetary institutions with own budget, but also «funds» with and «appropriations» without legal personality. All these units are accounting and reporting, thus statistical units. Budgetary institutions form units for «production», funds are appropriations for carrying redistribution function. The Hungarian system makes difference between the «centrally-managed appropriations» – such as taxes, social contributions, normative types of subsidies and transfers and financing –, and “chapter-managed appropriations» that are at the relevant chapter’s discretion.

Table 1 characterises the institutional development of the Hungarian legal government sector defined by the Public Finance Law between 1991-2002.

Table 1 Institutional coverage of the legal Government in Hungary (1991-2002)

Main indicators	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1) Central Budget												
- Revenues (non-consolidated) in percent of Total Revenue of the Legal Government	46,7%	45,2%	47,2%	46,6%	49,6%	52,7%	49,8%	47,2%	50,2%	50,8%	49,4%	47,4%
- Expenditures (non-consolidated) in percent of Total Expenditure of the Legal Government	49,5%	49,6%	50,1%	49,3%	51,4%	51,5%	51,8%	51,1%	52,1%	52,7%	51,6%	53,6%
1/a) Centrally managed appropriations												
- Revenues (non-consolidated) in percent of Total Revenue of the Legal Government	39,5%	37,2%	39,6%	38,0%	43,1%	45,8%	43,9%	40,8%	41,8%	43,1%	42,4%	41,1%
- Expenditures (non-consolidated) in percent of Total Expenditure of the Legal Government	30,8%	28,7%	27,5%	30,4%	34,0%	33,1%	32,7%	31,9%	29,6%	28,4%	26,3%	28,6%
- Number of line items in the Budget approved by Parliament	250	201	340	355	364	372	302	236	266	250	290	288
1/b) Chapter-managed appropriations												
- Revenues (non-consolidated) in percent of Total Revenue of the Legal Government	0,4%	0,1%	0,1%	0,0%	0,1%	1,2%	0,4%	0,7%	2,9%	1,7%	0,9%	0,9%
- Expenditures (non-consolidated) in percent of Total Expenditure of the Legal Government	2,8%	3,9%	6,1%	2,6%	2,2%	3,6%	4,8%	4,7%	7,1%	7,4%	7,5%	8,8%
- Number of line items in the Budget approved by Parliament	183	171	355	566	399	438	379	389	605	650	674	696
1/c) Central budgetary institutions												
- Revenues (non-consolidated) in percent of Total Revenue of the Legal Government	6,8%	7,8%	7,5%	8,5%	6,5%	5,8%	5,5%	5,7%	5,5%	6,1%	6,1%	5,4%
- Expenditures (non-consolidated) in percent of Total Expenditure of the Legal Government	15,9%	17,0%	16,5%	16,3%	15,2%	14,8%	14,3%	14,6%	15,4%	16,9%	17,8%	16,2%
- Number of line items in the Budget approved by Parliament	284	166	320	292	326	294	203	194	208	198	193	186
- Number of budgetary institutions	1 438	1 410	1 470	1 393	1 385	1 304	1 251	1 464	691	688	653	619
- of which autonomous in management	651	651	684	669	673	584	584	628	489	495	496	476
- Average number of employees (thousand)	*348,3*	*324,0*	*335,2*	*330,4*	*313,9*	*290,1*	*281,2*	*306,5*	*304,3*	*297,5*	*285,8*	*245,6*
2) Extrabudgetary funds												
- Revenues (non-consolidated) in percent of Total Revenue of the Legal Government	7,5%	6,6%	7,4%	7,3%	5,3%	3,9%	4,3%	4,9%	2,3%	2,3%	2,4%	2,5%
- Expenditures (non-consolidated) in percent of Total Expenditure of the Legal Government	6,8%	6,0%	6,4%	6,9%	5,1%	4,0%	4,0%	4,3%	2,7%	2,1%	2,3%	2,1%
- Number of funds	29	31	35	30	29	5	5	6	2	2	2	2
- Number of line items in the Budget approved by Parliament	91	97	144	114	135	125	102	102	41	47	47	44
3) Social security funds												
- Revenues (non-consolidated) in percent of Total Revenue of the Legal Government	24,2%	24,2%	23,1%	23,1%	22,7%	21,2%	22,2%	24,0%	24,3%	24,0%	25,0%	26,3%
- Expenditures (non-consolidated) in percent of Total Expenditure of the Legal Government	24,1%	23,0%	22,5%	22,0%	22,5%	23,1%	22,5%	23,0%	23,6%	23,7%	24,1%	23,2%
- Number of funds	1	2	2	2	2	2	2	2	2	2	2	2
- Number of line items in the Budget approved by Parliament	29	42	50	89	80	86	87	87	116	118	110	114
- Number of budgetary institutions	78	78	78	78	78	78	78	74	115	66	65	84
- of which autonomous in management	46	46	46	46	46	46	46	43	68	28	28	67
- Average number of employees (thousand)	…	…	…	…	…	…	…	…	*8,9*	*8,8*	*8,0*	*8,0*
4) Local Governments												
- Revenues (non-consolidated) in percent of Total Revenue of the Legal Government	21,7%	24,0%	22,3%	23,0%	22,4%	22,2%	23,6%	23,9%	23,2%	22,9%	23,1%	23,7%
- Expenditures (non-consolidated) in percent of Total Expenditure of the Legal Government	19,7%	21,5%	21,0%	21,8%	20,9%	21,4%	21,7%	21,7%	21,6%	21,5%	22,0%	21,0%
- Number of budgetary institutions	14 461	13 603	13 365	13 574	13 627	13 509	13 383	13 428	13 552	13 490	13 492	13 701
- of which autonomous in management	7 772	7 781	7 913	8 001	7 972	7 801	7 665	7 586	7 512	7 277	7 138	7 066
- Average number of employees (thousand)	*612,2*	*563,6*	*577,9*	*573,4*	*566,1*	*546,9*	*527,7*	*560,1*	*557,7*	*556,6*	*535,1*	*531,7*

Source: Ministry of Finance

4. Deviation between the legal and statistical concept of government standardised by national accounts statistics

National accounts (NA) statistics and the new Government Finance Statistics (GFS) published by IMF in 2001 prescribes economic sector by classification organisational units: one unit may belong only to one sector, and borderline cases should be deep-analysed to explore lasting characters of their economic behaviour. The old GFS still attempted to enforce using government functions for delimitation government, but this approach has been given up in the new one.

Units of legal government sector in Hungary meet double-criteria (control and financing) to be belonged to statistical government sector. Two questions have to be answered:

- Are there unidentified units within the legal government circle to be reclassified into other sectors, hidden: as a consequence of the present register of budgetary units and available information provided by the accounting system?
- How can we find other units with government-character, but hidden in other sectors?

The new Public Finance Law and government decree for implementation sketched basic activities of budgetary units by listing the main government functions in provision public services. These regulations named for example: education and health care as government function, but did not specify the role of government in education and health care, it remained in the scope of sectoral public policy legislation. Being aware of entrepreneurial activities of budgetary units that have always been existing since 1968, the new Law limited the scope and size of commercial activities within legal government boundary. If revenues from commercial activities exceed one-third of the total revenue (including budget transfer) in two subsequent year, the supervisor authority (ministry, local government) has to separate the commercial activities to an entrepreneurial type organisation form, or to do so with entire budgetary institution, if it is needed. The later experience shows that these types of transition may take place prior to regulatory pressure. This signal mechanism may reassure both fiscal and statistical interest to keep homogenous circle of budgetary units.

More difficult to answer the second question, how to pick up non-government units with quasi-fiscal activities, since they are out of institutional coverage of Public Finance Law. The present difficulties may be attributed to transition, not only to Parliament-driven but also spontaneous organisational transformation as escaping from tied budgetary management circumstances.

Prior to turning to potential group of economic units to be examined for sectoral classification, it is important to emphasis the fiscal side of the issue.

The process of forming fiscal policy and detailed budget may not afford not to be a definite position to overview those organisations that are owned (even indirectly) and/or financed by government but outside the budgetary sector. Nowadays the continuation and efficiency of these types of ownership and financing functions request the same scrutiny then those that are normal and regular in budgetary sector. There is no time to wait for results of statistical authorities to pick up potential units to be reclassified; government duties have to be identified long before compilation statistics. Hungarian fiscal authorities now make efforts to canal obtaining the necessary information in the government financial information system, in order to diminish its lagging behind the transition process, government simply lost information either accidentally or consciously (by demonstrating its withdrawal from certain areas). Nevertheless these information (like reports and monitors on balance sheets and profit/loss statements) are actually available for the actual owners and supervisors, and for also for tax-authorities and statistical office. Tax declarations and statistical survey data are forbidden to use for other purposes by law. Owners and supervisors are reluctant or even resistant to share their «cards» in the game of budget bargain. The need for immediate government intervention in a form of capital injection or debt-assumption sometimes caused unexpected payment obligation in the previous year, so budgeting has to be more comprehensive and careful. The «Glass-pocket Program» (see in point 6.) announced by the Government in 2001 creates the legal background for obtaining regular and standardised accounting data.

5. Grey zone around the government

To find non-budgetary units to reclassify them into the general government as defined in NA statistics, both enterprises and non-profit units have to be analysed. The Hungarian Civil Code specifies 18 categories of organisational form of economic units. From this offer the following are provided for non-profit operation:

- budgetary institution,
- public body (from 1994),
- foundation (from 1987), public foundation (from 1994),
- non-profit company (from 1994),
- society,
- association.

The development of non-profit sector can be illustrated by the following figures:

Table 2 Number of non-profit institutions by organisational form (1993-2000)

Non-profit organisations	1993	1994	1995	1996	1997	1998	1999	2000
Total number of non-profit organisations	34662	40159	42783	45316	47365	47384	48171	47144
- foundation	11884	14132	15192	16392	17767	18299	18653	18532
- public foundation	-	84	458	717	836	926	1101	1168
- public bodies		178	250	618	467	493	496	472
- non-profit companies		73	184	344	505	633	752	888

Source: Hungarian Statistical Office

In the previous regime state-dominance characterised not only corporation and banking sector, but official non-profit sector as well (the single party and single trade union with their affiliated units, and even charity organisation of Hungarian Red Cross). At the end of '80-s a rapid legislation conducted the establishment of democratic institutions (president of the republic, law court, state audit office, ombudsman) and liquidation former party&state-controlled organisations and networks. In connection with latter process, other former party&state-influenced areas were also transformed. Some areas remained within the budgetary sector but given up fiscal control of government (state and legislative organs, independent bodies), others were converted in non-budgetary forms. The entire spectrum of media, the academy of science, chambers, societies and associations, trade union properties have been transformed non-profit institutional forms. Economic pillars of independent operation were established by transferring property, passing budget revenues and guaranteeing operational grant for them by law. They may be qualified as first generation newcomers of a «grey zone», where the control have been demonstrated non-government, but fiscal relations still have remained tight.

The rise and fall of extrabudgetary funds is a special Hungarian story with lessons. They may be accounted among first-generation newcomers. These funds could find earmarked tax-type revenues (either imposing new taxes or passed by the budget) for long-term sectoral purposes, and achieved certain independence from the conditions of the actual budget. In the middle of '90-s 35 funds existed outside the budget. In 1995-98 government measures for improving the transparency of budget – backed by recommendations of State Audit Office – persuaded about 30 and later 4 of them to integrate within the central budget. At present only 2 funds exist: Labour Market Fund, and Central Nuclear Financial Fund, and from 1998 the Parliament votes on their budget under the framework of the annual budget law.

Second generation was growing up by supporting and sponsoring civil initiations forming mainly foundation, later public foundation. There is no doubt about statistical treatment of public foundations. Public foundations operate manly in field of: human services, minority and veteran affairs, regional and settlement development. Private foundations may also get budget transfer, so they have to be monitored as well.

The third generation in the grey zone may be ascribed to penetrating market elements into the budgetary sector. Budgetary management with introduction a treasury system in 1996 has become quite bound and rigorous. Some activities were considered to organise more effectively in non-budgetary institutional form, since performances, outputs and costs can be measured and financed in accordance with outputs. Such considerations resulted transformation of state entrepreneurial property (shares) management into a corporation from budgetary form in 1996, and its interesting, that the same step with the «brother»: state debt management occurred much later, in 2001. Hungarian Civil Code enacted the special form of «non-profit company» in 1994, describing this institutional form as non-profit acting for the sake of entire society without acquisition of assets

(compared to foundations), entrepreneurial activities are allowed, corporation law are relevant, but profit-distribution is prohibited. Few of non-profit companies may be created as a consequence of government measures in downsizing the budget sector, but main stream can be assumed as organic development and spontaneous transformation. Activities that were placed into non-profit corporations are either internal services (such as subsidiaries: reception, cleaning, feeding-boarding, maintenance, computerisation, accounting, analyses and policy-advice), or entire public services (such as road-management, operation cultural and sport buildings, managing construction of public buildings and structures). There are new ideas and even legal possibilities to transform hospitals or universities into non-profit companies with aim of being more attractive to absorb private capital. At the end of the last year Hungarian Government decided to stop maintaining quasi-fiscal activities by Hungarian Development Bank (including road-construction), and among clean-up measures, government became direct owner of some corporations. The above-characterised third part of the grey zone means the fishpond for catch government fishes.

Summarising the history: Before the '90-s budgetary institutions enjoyed relative autonomy and wore similar attributes to state companies. In the '90-s a wild spectrum of types of organisational form grew up. In lack of private capital, a large part of new or transformed organisation with non-profit character has been still financed directly or indirectly by government. The level of presence of government in controlling these units can be high.

6. «Glass-pockets" Transparency Program and other government measures

Series of government measures have been taken with the aim of enhancing fiscal transparency and control and providing more extended picture on government-influenced area, that is the above-described grey area. There are also strong commitments to exclude possibility of avoiding publicity and corruption. "Glass-pockets Act" states as a fundamental principle the disclosure of data relating to the use of budget funds and the management of public property may not restricted by the protection of business secrecy. The glass-pocket program includes lots of obligation to make data public and also provides fund to implement it by developing electronic forms of publication.

Heads of budgetary chapters and budgetary institutions are obliged by regulation to evaluate the use of budget resources that are transferred to foundations, public foundations, public companies, limited liability companies, public corporation supervised and controlled by them. Following the first reports, in December 2002 Government announced a revision-program to overview the activities and financing mechanism of these organisations. Government recognised signs of transfer increasing part of public services to more flexible and mobile organisations than traditional budgetary institutions, so ministers have to evaluate this trend, indicate direction of future developments, make measures to use budget money more effective. Nevertheless certain issues also have to be scrutinised with respect to competition rules. The program utilises the principles of NA statistics in classification units into economic sectors, but simply serving public policy purposes by a corporation does not mean to classify it into the government sector. A more comprehensive and augmented calculation should take into account all costs of public policy, even if they may occur outside the government sector boundary. Thus the review may explore: (1) the aim and nature of owner's transactions (initial fund and capital increase, dividends); (2) the economic nature of budget transfer related to public services (subsidies to product or production, capital transfer to cover accumulated losses or acquisition fixed assets); (3) whether the government purchases goods and services from these units and on what price. The review is still under way and expected to gather lots of information and hidden data for further analyses and statistics. In addition, even for harmonising the institutional coverage of the national budget with statistical principles, although it is not an expressed target.

II. Government competencies in generation and use of public money

1. Need for more specified observation and interpretation of government

Institutional-based statistics may partially help in exploring fiscal stance, forming fiscal policy and budgeting appropriations. The new GFS has achieved more specification in the nature of government finances, but far more not exhaustive. Government should have more comprehensive picture on its expanded operational area: over its own institutional coverage targeting indirectly controlled and influenced activities and transactions. Such an information system should respect the following needs:

- importance of analysing internal and external fiscal risks is growing in the course of budgeting;
- the efficiency of several options should be examined to choose the appropriate way of carry out government functions;
- international comparison is needed, but limited due to national differences of tax-bases, tax-allowances, traditions in redistribution of responsibilities between levels of government and in mode of provision public services.

Hungarian practices make it clear, that a more sophisticated and expanded (in coverage and in time-horizon) government accounting frame should better serve fiscal policy, be appropriate for statistics, analyses and budgeting and even for modelling.

Compilation of "Government Satellite Account" similar to those of others (Households, Social Protection, R & D) may contribute to deep-analyse and system-driven development in interpretation and measurement of the size of the government. Satellite account as it is an integrated system for observation by various classifications and cross-classifications, may be more adequate for government specialities. It may cover all the existing standardised statistics that are relevant to government, both general and specialised classifications, may build up the basic linkages to national accounts (as the other satellite accounts), but even absorb new and new segments of exploration government, such as:

- competencies, either «front-office» competencies reflecting the role of government in provision public services, transfers, subsidies, or «back-office» competencies expressing the way how the «front-office» competencies are organised;
- distribution between levels of government;
- composition of own-account production of public services versus purchased public services by COFOG functions;
- size and composition of government ownership in public enterprises.

The size of the government may be calibrated with its immanent non-market motivation manifesting in redistribution, in generation and use of public money and public property. Generation and use of public money and public property appears in different competencies (as entities): taxation, provision of public services, public property management, financing and debt-management.

The category of «public money» should be expanded over the concept of revenues and expenditures of government defined by institutional-based sectorization. All government-influenced spending for public policy purposes should be included, regardless of sectorization of the spending unit as non-government by NA statistics. Such an expanded category of «public money» may include tax-relieves and -allowances as targeted support, cost of deviation from market prices due to price-regulation, capital decrease due to losses uncovered by government as exclusive or majority owner of corporation. Existing fiscal and national statistics use narrower accounting: tax is that inflows, transfer is that outflows defined by relevant laws, thus exclude from accounting horizon government influenced areas. Only question of time: when and how they would appear in government budget.

Public-private partnership schemes may highlight inevitable fact of payment obligation often hidden in timing-game. Only few PPP project have already been completed, thus not so easy to analyse and generalise them, no exhaustive statistical rules of treatment have been established yet. Although PPP-s and privately provided public services (such as: compulsory education organised by churches and foundations, family doctors and dentists as in Hungary) as well may be financed more or less from the budget, the output of the provider are not calculated as scope or size of government, according to 50 % rule introduced for ESA'95 government deficit calculation.

Delimitation of category «public money» must be rationalised: actual direct or indirect role in financing, authorisation for audit tax-declaration and entitlements for transfers, actual exercise of government control may designate potential borders. For example: cost of public services of compulsory education provided by private sector financed partially by the budget and the clients, may belong to the expanded category of public money, while compulsory reimbursement for children-care payable by divorced parent or compulsory motor-car insurance payable by individuals, both determined by law not no involving budget fund at all, may be kept out of it.

Statistical classifications that are relevant for government are the followings:

Classification	Unit of classification	Principle of classification	Methodology
Economic sectors	Institutional unit	Economic behaviour	SNA, ESA, GFS
Government functions by socio-economic objectives	Government expenditures	Socio-economic objectives	COFOG
Activities	Local KAU-s	Applied technology	NACE
Products	Produced goods and services	Physical characteristics of goods and services	CPC, CPA
Economic	Economic flows and stocks	Phases of economic circulation	SNA, ESA, GFS
Regional	Government revenues and expenditures	Targeted community in a given geographical area	SNA, EAS
Taxation	Tax obligations and payments	Economic classification of tax bases	SNA, ESA, GFS, OECD Revenue Statistics
Social protection	Certain revenues and expenditures	Types of social risks and need	ESSPROS satellite account
Research and development expenditures	Certain revenues and expenditures	Social aims of research and development	R & D satellite account

These classifications may be completed by new others, such as competencies in generation and use of public money.

2. Experimental classification to measure government competencies in the Hungarian Central Budget

Hungarian budget documents are extremely detailed and difficult to analyse, thus we are trying to find a solution that systematises and integrate both budget and off-budget accounts in a unified framework. We considered a basic structure, which characterises any government any time in a stable and comparable way. Government core competencies seem to be an appropriate skeleton to choose as basic structure.

The following core government competencies can be identified:

- taxation,
- provision of public services,
- property management,
- programs and transfers (for achieving public policy purposes outside government),
- acquisition and use of reserves,
- financing.

These competencies embedded in socio-economic government functions (COFOG) may offer an alternative structure for presentation and aggregation budget and non-budget accounts. As it was highlighted in Chapter I, a significant part of statistical sector are beyond the coverage of legal government in Hungary, and as a first step we have to find a common structure to fit together two different sets of data. We also consider this frame of competencies appropriate for potential delineation of semi-hidden accounts (tax-expenditures, guarantees, and public policy loans). Due to limitation of the study, instead of description of competencies, it only flashes an experimental classification that we have already used for reclassification of budget appropriations and started to fit off-budget building blocks into it. Its potential contribution to fiscal analyses can be pointed with the following issues, as examples.

a) Taxation

Four sizes can be identified in measuring taxes:

- tax-payment as it is determined by tax laws calculated on cash/accrual bases
- plus tax expenditures (tax-allowances)
- taxes estimated with harmonised tax-keys
- taxes estimated on harmonised tax-base.

Tax-expenditures related to income taxes have been regularly published in final budget accounts in Hungary, but budget expenditures have not been grossed up with tax-allowances yet for presentation purposes, although they have importance in family support or promoting investments, as it is shown in the following table.

Table 3 Tax revenue and tax-expenditures in income taxes (1997-2002) (In percent of GDP)

Tax revenue, tax-expenditures	1997	1998	1999	2000	2001	2002
Personal income tax revenue	6,3	6,6	6,9	7,3	7,7	7,6
+ Tax expenditures	2,3	2,8	2,2	2,0	2,3	2,1
• employee tax credit	1,5	1,5	0,7	0,6	0,5	0,8
• pensions	0,3	0,7	0,8	0,8	0,8	0,5
• family support	-	-	0,3	0,3	0,6	0,5
Corporate income tax revenue	2,0	2,1	2,3	2,2	2,4	2,3
+ Tax expenditures	0,8	0,9	0,8	0,8	0,5	0,5
• tax credit to joint ventures	0,5	0,5	0,3	0,3	0,2	0,1
• tax credit to investments	0,0	0,1	0,1	0,2	0,2	0,2

Source: Ministry of Finance

For international comparison the third and fourth phase of expanded calculation seems to be inevitable.

b) Provision of public services

Public services usually are calculated net/or gross bases: either only budget transfer to units that provide public services, or service charges on the revenue side and total cost on the expenditure side. There is a trend in composition of the expenditure by purchasing input-type services instead of own-account production (cleaning, laundry, and reception). Nowadays in some area we can find purchased output-type services. If a service-provider meet ESA'95 50% criteria, it belongs to the government sector. If not, the government accounts the bill as purchased services. Does government need to have an overall picture on public services regardless the sectorization of the provider? Is it important for government to monitor the cost of the services and the service charges and fees? The answer is yes, certainly, if the government regulates prices or has the possibility to influence the level of charges and fees. The answer may be yes, if the government has to or willing to provide support in any form to the consumers or certain groups of consumers. In some of the new PPP-schemes government may have an obligation to cash a regular payment with mobile amount, that secures a certain level of revenues or profit. Can the volume, cost and charges be indifferent for government in such PPP-s? Surely, not.

c) Property management

Government acts as owner in acquisition, management and disposal of financial and non-financial assets. These functions should be distinguished from service-provider functions; some countries make this separation clear by maintaining the system of capital charging or interest-bearing intra-governmental lending. Government may realise property income on them, such as rental, dividend, concession fees or account property expenses. With the exception of certain entitlements (like golden shares) government exercises similar ownership rights as any other owners, but some of its transactions may have non-market motivation causing cost for the budget.

d) Programs and transfers

Programs and transfers form tool-kit for promoting public policy intentions and objectives outside the government sector. Direct and indirect tools can be identified. Direct forms are familiar, the way and process of allocation seem to be relevant criteria to categorise them in case of Hungarian palette. Normative, discretional and competition-bid forms are the basic ones. Indirect forms are the followings in the Hungarian practice: policy lending, issuing government guarantees and warrantees, tax-expenditures. Not only present expenditure should be taken into accounts, but log term commitments as well.

e) Accumulation and use reserves

As the Hungarian experimental classification covered the budget appropriations, a technical group served segregation of general and earmarked government budget reserves that are allocated during the execution of the budget.

f) Financing

This group of government accounts includes acquisition, assumption, transformation, and amortisation of financial liabilities, especially debt-related ones. Financing functions are generally allocated to debt-management agency separated from finance ministries. These functions – in Hungary – comprises intra-governmental lending for liquidity purposes as well.

Table 3 shows the result of the experimental classification of government competencies of the Hungarian Central Budget, which is largest redistributor in the public finances with more than acceptable number of line-item to be voted (approx. 2550, of which 2150 expenditure).

Table 4 Government competencies in the Hungarian Central Budget (1999-2002)

Government competencies		1999 Budget		2000 Budget		2001 Budget		2002 Budget	
Code		Expenditure	Revenue	Expenditure	Revenue	Expenditure	Revenue	Expenditure	Revenue
		In percent of total expenditures, total revenues							
	Total	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**
1	**Provision of public services**	**43,2**	**9,5**	**44,0**	**9,3**	**45,2**	**9,2**	**44,8**	**8,9**
1.1	Public services provided by budgetary institutions	25,0	8,4	25,5	8,9	25,3	8,9	26,1	8,7
1.2	Special institutional tasks	3,5	1,1	3,2	0,3	3,0	0,3	2,9	0,3
1.3	Purchased public services	2,2	0,0	0,9	0,0	0,9	0,0	0,9	0,0
1.4	Intra-governmental transfer to other subsectors for financing public services	12,6	0,0	14,5	0,0	16,1	0,0	14,8	0,0
2	**Property management**	**8,1**	**2,9**	**9,0**	**4,1**	**8,9**	**4,3**	**9,4**	**2,1**
2.1	Physical asset management - centralised	5,3	0,4	4,0	1,0	3,8	0,8	4,0	0,2
2.2	Physical asset management - delegated to budgetary institutions	0,8	0,2	2,8	0,2	3,1	0,2	3,3	0,2
2.3	Management of shares and equities	0,1	2,3	0,2	2,9	0,1	3,4	0,1	1,8
2.4	Intra-governmental transfer to other subsectors for financing capital expenditures	1,9	0,0	2,0	0,0	1,9	0,0	1,9	0,0
3	**Programs and transfers**	**26,7**	**4,1**	**28,3**	**1,5**	**28,0**	**1,3**	**28,0**	**1,0**
3.1	Programs	2,4	1,8	2,4	0,4	2,7	0,4	3,1	0,3
3.2	Discretional transfers	9,1	0,9	11,2	0,3	11,4	0,2	10,7	0,2
3.3	Normative types of subsidies, transfers	14,1	0,0	12,9	0,0	12,8	0,0	12,9	0,0
3.4	Lending for policy purposes	0,0	1,0	0,0	0,5	0,0	0,4	0,0	0,3
3.5	Guarantees	0,5	0,2	1,1	0,1	0,4	0,1	0,4	0,1
3.6	Transfers by competition bids	0,5	0,2	0,7	0,2	0,7	0,1	0,7	0,1
4	**Taxation**	**0,1**	**81,4**	**0,2**	**82,6**	**0,2**	**83,6**	**0,2**	**87,1**
5	**Accumulation and use of reserves**	**0,7**	**0,1**	**1,3**	**0,0**	**1,6**	**0,0**	**2,0**	**0,0**
6	**Financing**	**21,2**	**2,0**	**17,2**	**2,5**	**16,0**	**1,6**	**15,7**	**0,9**
		In percent of GDP							
	Total	**33,2**	**29,8**	**32,7**	**29,0**	**30,6**	**27,3**	**27,8**	**25,3**
1	**Provision of public services**	**14,4**	**2,8**	**14,4**	**2,7**	**13,9**	**2,5**	**12,4**	**2,3**
1.1	Public services provided by budgetary institutions	8,3	2,5	8,3	2,6	7,7	2,4	7,3	2,2
1.2	Special institutional tasks	1,2	0,3	1,0	0,1	0,9	0,1	0,8	0,1
1.3	Purchased public services	0,7	0,0	0,3	0,0	0,3	0,0	0,2	0,0
1.4	Intra-governmental transfer to other subsectors for financing public services	4,2	0,0	4,7	0,0	4,9	0,0	4,1	0,0
2	**Property management**	**2,7**	**0,9**	**2,9**	**1,2**	**2,7**	**1,2**	**2,6**	**0,5**
2.1	Physical asset management - centralised	1,8	0,1	1,3	0,3	1,2	0,2	1,1	0,1
2.2	Physical asset management - delegated to budgetary institutions	0,3	0,1	0,9	0,1	1,0	0,0	0,9	0,0
2.3	Management of shares and equities	0,0	0,7	0,1	0,8	0,0	0,9	0,0	0,4
2.4	Intra-governmental transfer to other subsectors for financing capital expenditures	0,6	0,0	0,6	0,0	0,6	0,0	0,5	0,0
3	**Programs and transfers**	**8,9**	**1,2**	**9,2**	**0,4**	**8,6**	**0,3**	**7,8**	**0,3**
3.1	Programs	0,8	0,5	0,8	0,1	0,8	0,1	0,9	0,1
3.2	Discretional transfers	3,0	0,3	3,7	0,1	3,5	0,1	3,0	0,0
3.3	Normative types of subsidies, transfers	4,7	0,0	4,2	0,0	3,9	0,0	3,6	0,0
3.4	Lending for policy purposes	0,0	0,3	0,0	0,1	0,0	0,1	0,0	0,1
3.5	Guarantees	0,2	0,0	0,4	0,0	0,1	0,0	0,1	0,0
3.6	Transfers by competition bids	0,2	0,1	0,2	0,0	0,2	0,0	0,2	0,0
4	**Taxation**	**0,0**	**24,2**	**0,1**	**24,0**	**0,1**	**22,8**	**0,1**	**22,0**
5	**Accumulation and use of reserves**	**0,2**	**0,0**	**0,4**	**0,0**	**0,5**	**0,0**	**0,6**	**0,0**
6	**Financing**	**7,1**	**0,6**	**5,6**	**0,7**	**4,9**	**0,4**	**4,3**	**0,2**

Source: Ministry of Finance

The data in Table 4 are strictly the annual budget law data. This is the first building block in developing the system. The second step is to consolidate other subsectors of the legal government sector. The third step is integrating non-government units classified as government in NA statistics and achieving the same coverage, timing and valuation of transactions as in ESA'95. The result can be called as core-model. The next steps involve huge workload to elaborate special building blocks (like tax expenditures, PPP-schemes, cost and charges of public services provided by private producers) and also theoretical background to analyse structure and development of government competencies. Classification of competencies combined with socio-economic government functions (COFOG) may lead to further analyses in conceiving alternatives (public services versus social/economic protection versus tax-allowances) within one government function. Options may also affect the distribution of government responsibilities between levels of government.

This attempt illustrates advantages of the use of statistical methods for analysing and forming fiscal policy. New and internationally more comparable dimensions of observation may serve the design and planning how to modernise public finances and the public sector, accelerate close-up process, convergence or harmonisation certain elements. Government Satellite Accounts should provide a more exhaustive framework than it is available in institution-based sectoral statistics, and should be more extensive in term of time by forming basement for models and projections or identification of fiscal policy mix alternatives. While functional satellite accounts integrate government and non-government accounts related to the topic (health care, social protection, environment protection), the government satellite accounts should focus on government competencies that are manifested in generation and use of public money.

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PUBLIC SECTOR IN THE SYSTEM OF NATIONAL ACCOUNTS VERSUS NATIONAL SOCIAL SECURITY SYSTEMS DO THE NATIONAL SECURITY SYSTEMS HAVE TO FIT TO NATIONAL ACCOUNTS CONCEPTS OR SHOULD NATIONAL ACCOUNTS CONCEPTS REFLECT NATIONAL REALITIES?

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1. Background

The recent discussions about the public sector expenditures in Switzerland have given raise to the question how different structures of National Social Security Systems have an impact when comparing of the size of the Public Sector on an international level.

Following the European system of accounts (ESA 95) in the on going revision of the Swiss national accounts, large segments of the Swiss Social Security System are not part of the public sector. Nevertheless, private health insurance for example is not only compulsory but all services and premiums to be paid by households are controlled and fixed by the general government.

The paper will present an approach actually developed by the Swiss Federal Statistical Office which aims to define flexible and integrated methods for measuring the size and the impact of the public sector on the national economy. In order to respect international and chronological coherence, this method will be mainly based on National Accounts information.

2. The European System of Accounts of 1995 (ESA 95)

2.1 General Features of ESA 95

The 1995 **E**uropean **S**ystem of National and Regional **A**ccounts (ESA 95) consists of a coherent, consistent and integrated set of macroeconomic accounts, balance sheets and tables based on internationally agreed concepts, definitions, classifications and accounting rules.

ESA 95 is fully consistent with the world-wide 1993 System of National Accounts (SNA 93) and some of the most important economic statistics, in particular the IMF Balance of Payments manual (BPM), the IMF Government Finance Statistics (GFS) and Revenue Statistics (Canberra Group Report).

ESA 95 provides a comprehensive and detailed record as well of the complex economic activities taking place within an economy as of interactions between the different economic agents that take place on markets or elsewhere. ESA 95 is a multi-purpose-system designed for economic analysis, decision-taking and policy-making. National Accounts are also used to investigate the causal mechanisms at work within an economy and to evaluate the performance of a given economy compared to other countries.

Furthermore, for the EU and its Member States, the ESA 95 plays a major role for the monitoring and guiding of social and economic policies. As far as the General government sector is concerned, the convergence criteria for the European Monetary Union are defined in National Accounts indicators: government deficit, government debt and GDP.

2.2 Institutional sectors according to ESA 95

For the purpose of the System, all institutional units[1] that are resident in a given economy are grouped together into five institutional sectors. For each of these five sectors it is possible to compile a full sequence of accounts (current accounts, accumulation accounts and balance sheet). The five sectors together add up to the total economy.

The table below shows the type of producer, the principal activities and functions that characterise each sector:

[1] ESA 95, § 1.28: *Institutional units are economic entities that are capable of owning goods and assets, of incurring liabilities and of engaging in economic activities and transactions with other units in their own rights.*

Sector	Type of producer	Principal activity and function
Non-financial corporations (S.11)	Market producer	Production of market goods and non-financial services
Financial corporations (S.12)	Market producer	Financial intermediation including insurance and auxiliary financial activities
General government (S.13)	Public non-market producer	Production and supply of non-market output for collective and individual consumption
Households (S.14) – as consumers – as entrepreneurs	— Market producer or private producer for own final use	Consumption Production of market output and output for own final use
Non-profit institutions serving households (S.15)	Private non-market producer	Production and supply of non-market output for individual consumption

As for other institutional sectors, the general government is divided into sub-sectors:

- Central government (in Switzerland: Confederation)
- "State" government (in Switzerland: Cantons)
- Local government (in Switzerland: Communes)
- Social security funds:

According to ESA 95, this sub-sector includes all central, state and local institutional units financed by compulsory contributions whose principal activity is to provide social benefits.

To summarize, the ESA 95 sector classification of institutional units is based on the following criteria:

(1) Type of producers: market or non-market (financial or non financial)

(2) Legal form: public or private

Consequently, to be classified in the general government sector, an institutional unit has to be a public **and** non-market producer. All other institutional units which do not fit those two criteria have to be allocated elsewhere. Therefore a private social security unit and all related public mandatory contributions are for example allocated to the private sector (financial corporations).

3. Public sector vs. General government sector

3.1 Frontier between public and private sector: A political issue?

In most developed countries and in particular in the UE member states, globalization and integration of national economies forces policy-makers to reassess the size and the role of the public sector in order to estimate the impact of taxation, subsidies as well as public debt and deficit on domestic investment, employment, social conditions and over-all economic performance.

Nevertheless no broad international agreement has been found yet for the delimitation of the public and the private sectors. As a result, international comparisons are biased by the various institutional forms taken by the public sector and the social security systems in different countries. Of course, the lack of clear criteria defining the frontier between public and private is less tricky for the public administrations in a narrow sense than for the complex and diverse systems of social security and insurance.

All in all, the delimitation of the public sector is strongly influenced by the structure and role of the government in each country. On the one hand, certain countries consider the private sector to be pre-eminent and therefore the role of the government should be limited to one of facilitator and non-interventionist. On the other hand, other countries consider the role of government as to intervene each time the public interest has to be protected.

Between these two extremes lie those countries (and in particular European countries) who have adopted in the past a more or less interventionist conception of the government and who decide to shed progressively public functions to the private sector.

3.2 Social security systems: a key issue for the public sector

Since Bismarck's introduction of social security in Germany at the end of the 19th century most of the developed countries have adopted social security systems. Those systems were particularly rapidly growing in the post war period to the point that social security became a major fiscal institution. Because of its scale, method of finance and role in providing insurance, social security systems may be greatly influencing the performance of a number of economies, particularly with respect to their tax burden, rates of saving and employment.

Social security is primarily oriented towards the financing of retirement and health care in most countries. It is financed through contributions levied on workers' earnings or/and direct and indirect taxes levied by general government. Since social security benefits received are often loosely linked to taxes and contributions paid, social security also plays a role in redistributing resources.

In most countries, redistribution under social security is associated with unfunded or low funded social security systems. Unfunded social security schemes use current taxes and contributions to pay for current benefits (pay as you go). With this system, retirement (old age and survivors) social security schemes, for example, can only pay, on average, a return on contributions equal to the rate of population plus productivity growth. If the return is less than the economy's interest rate, workers contributing to unfunded pension schemes will receive a smaller return on their contributions than if they had been allowed to save these contributions and invest them in the economy.

If the development of unfunded social insurance schemes in most developed countries has been boosted after the Second World War by a fantastic economic growth and a high rate of employment, it is nowadays generally accepted that unfunded social security schemes will not be adequate to meet promised Social Security benefits. As a matter of fact, demographic ageing, high unemployment rates and cost explosion in health industry are forcing countries to re-examine their public social insurance systems.

Many experts suggest moving toward private mandatory schemes based on saving and investment structure because market returns are higher than those from the present unfunded public system and that tax increases or benefit cuts will be less onerous. On the other hand, opponents to this shift raise questions of market risks, retirement benefits of low-income workers in a privatized structure or the danger of a double speed health care system.

It is important to stress that the role of official statisticians in this context is not to take part in the political debate but to re-examine periodically the underlying statistical systems. In particular the question put forward at the moment is if the quite rigid notion of general government in ESA 1995 based on legal form is not to be adapted in order to fit new social and economic realities.

4. Case study: The Swiss social insurance system

4.1 Introductory comments

Switzerland has a comprehensive social network which has been constantly developed and expanded since the late 1940s to the mid 1990s. Its development was supported by positive economic growth and predominantly healthy public finances.

Unlike many other countries, Switzerland collects a large share of social contributions under a private social insurance system. Such contributions are not captured by government revenue statistics, although they are government-mandated. This treatment as well as the allocation of those social security insurances to other institutional sectors than the general government is consistent with ESA 95. But at the same time it means that tax burden in Switzerland is - compared with other European countries - not as low as appears at first sight.

The following sections of the paper deal with health care and retirement social insurance schemes. Indeed, weak economic growth and cost explosion in the Swiss health care industry have demonstrated the emergency to find ways out in order to base the system on a sustainable financial foundation and to determine target groups on which to concentrate the available funds.

4.2 Overview of the Swiss health care insurance system

Currently politicians and various experts pay great attention to the Swiss health care system. In international comparison, Swiss health expenditures are among the highest in the world mainly because of dramatic cost ex-

pansion in the last decade: between 1990 and 2000, costs increased by 4.8% per annum, almost close to twice as much as the gross domestic product for the same period.

But the debate heats up when premiums of the obligatory health care insurance are discussed as they have increased by 6.5% per annum on average between 1985 and 2000. Since this social security scheme is financed by contributions, which take the form of premiums per capita, the economic burden does not cease growing for the households and touches much more severely the middle classes of income. Earlier political measures taken to reduce premiums for the low income households have now become a burden for the middle income classes as premiums for these types of households were increased over average and they are - under the present legal prescriptions – not able to assert any reduction

The table below aims to give an overview of the organization, the financing and the sector classification of the Swiss health care social insurance system:

Health care insurance schemes:	
Organization and scope (Type of producers)	The Swiss health care insurance system is operated by private insurance institutions subject to the Federal Law on Insurance Supervision: (a) Compulsory health care insurance is regulated by the Federal Law on Sickness Insurance (LAMal). (b) Insurance institutions have the right to provide insurance cover in addition to the compulsory health care insurance. But this is not regulated by the LAMal.
Financing (Contributions)	(a) The insurer fixes the premiums to be paid by those it insures. The amount of these premiums must be approved by the Federal Regulation Authority (OFAS) and can differ from one Canton to another depending on the health care costs. (b) The insurer fixes the contributions to be paid by those it insures on purely private basis.
Sector classification (According to ESA 95)	Federal Law on Insurance Supervision requires only a single complete set of accounts for each insurance institution even if this one is dealing with compulsory (a) and facultative (b) health care insurance. For this reason and according to ESA 95 definition of institutional units[2] such an insurance institution might be entirely allocated to the financial corporations sector (S.12); sub-sector of insurance corporations and pension funds (S.125).

4.2 Overview of the Swiss old-age and survivors insurance schemes

The Swiss pension system has a broad base with its three pillars: state pension provision (1st pillar), occupational benefits plans (2nd pillar) and private pension provision (3rd pillar). As these three pillars are well balanced and based on both the pay-as-you-go and the level premium system, risks can be diversified more efficiently. The three pillar system therefore usually gains high marks and a fundamental reform is not required. Nevertheless, there is a need for some improvement in order to cope with challenges such as emerging demographic developments.

In the years following the Second World War until the mid-1990s the social security system was established and expanded. Since the introduction of the 1st pillar scheme in 1948 each generation of pensioners has received more in pensions than they paid in contributions. This development was relied on positive economic growth and predominantly healthy public finances.

Limited economic growth and the unusually high level of unemployment for Switzerland in the 1990s demonstrated the extreme interdependence of social security and economic performance and at the same time brought changes to the social policy framework. Today, changes propose not expansion, but aim to consolidate and optimize the system of social insurances. The central question is how to put the system on a solid, long-term financial basis and who should in the future benefit from the available funds.

[2] According to ESA 95 (§ 2.12), *a resident unit is regarded as constituting an institutional unit if it has decision-making autonomy in respect of its principal function and either keeps a complete set of accounts …*

The table below gives an overview of the organization, the financing and the sector classification of Swiss old-age and survivors' insurance schemes:

Old-age and survivors insurance schemes	
Organization and scope (Type of producers)	Swiss old-age and survivors insurance system is based on the so-called three pillar system, a threefold system of public (1st pillar), occupational (2nd pillar) and private (3rd pillar) insurance. The first two pillars together should amount to at least 60% of the beneficiary's last income and allow pensioners to maintain the standard of living to which they are accustomed. 1st pillar: Public basic insurance which is compulsory for all persons who live or work in Switzerland 2nd pillar: Private occupational insurance which is mandatory only for persons working in Switzerland with an annual income of at least CHF 25,320. The 2nd pillar is administered by over 2000 different private pension funds. 3rd pillar: Optional and individual provisions organized by banks (blocked accounts) or private insurance institutions (insurance policies).
Financing (Contributions)	1st pillar: The basic old-age and survivors insurance scheme is based on the redistribution system (inter-generation solidarity). The contributions come to about 8% of the salary and one half of this amount is paid by the employer. Furthermore, 13.3% of total annual revenue of the Value added tax is allocated to the 1st pillar old-age and survivors scheme. 2nd pillar: The amount of the contributions is fixed by the regulation of the pension fund. The sum of the contributions of the employer should be at least equal to the sum of the contributions of his employees. 3rd pillar: The annual amount of the contributions is determined by the insured person. A certain amount of the contributions is deductible from taxable income
Sector classification (According to ESA 95)	1st pillar: Since the basic old-age and survivors insurance is a public compulsory social insurance scheme it has to be classified according to ESA 95 to the general government sector, sub-sector of social security funds (S.1314). 2nd pillar: However the 2nd pillar scheme is mandatory, it has to be allocated to the financial corporations sector, sub-sector of insurance corporations and pension funds (S.125). 3rd pillar: As expected, banks and private insurance institutions dealing with the 3rd pillar scheme are part of the financial corporations sector (S.12)

5. How can the public sector and its sub-sectors be integrated in an economic accounts framework ?

5.1 Strengths and weakness of ESA 95

At this stage, one could argue that the delimitation of the general government sector as defined in ESA 95 is too restricted and doesn't fit a broader concept of public sector including institutional units appointed by regulation to provide social protection or public goods and services in place of the government.

Nevertheless, ESA 95 is exhaustive and consistent within the boundaries of the economic activities it covers. The system is an international compatible framework that describes all economic transactions, within classifications that generally meet the requirements of any major macro-economic analysis.

On the other hand there are certain limitations as to what may be accommodated directly in the central framework. Those limitations are particularly obvious when the basic intention is not to use alternative economic concepts, but simply to make some particular economic aspects apparent or to analyze a number of important fields in more detail such as social protection or public sector.

Thus the challenging issue arises whether it is possible to keep the main benefits of ESA 95 when trying to reach agreement on simple and pragmatic criteria to re-allocate institutional units between public and private sectors.

5.2 Defining the frontier between public and private sectors

Some international organizations and in particular the OECD, defined already the various criteria which might distinguish the public from private sector, the criteria mentioned mostly are as follows:

- *Profit vs. non-profit institutions*

Profitability and profit-seeking could, in theory, be satisfactory criteria since the public sector is not primarily driven by the objective to achieve profits. Profit-seeking is, on the contrary, the essential driving force of the private sector.

However, this criterion might be ambiguous when trying to classify voluntary or non-profit organizations that are indeed private but are not founded on the principle of profit-seeking. On the other hand, one can hardly claim that the public sector ignores totally any profitability goal as for example are shown by the introduction of target rates of return for public agencies and enterprises and procedures for evaluating public policy, the impact of public decision-making, the performance of individual public employees, cost/benefit analyses as well as the search for rigorous and better management of public funds.

- *Public interest vs. private interest*

Public service and public interest would, in theory, be the exclusive concern of the public sector while private and specific interests would characterize the private sector. But this distinction can also be contested. In some countries, public interest is intended to be safeguarded through regulation, including the creation of independent regulators and competition policy. Moreover, non-governmental organizations with humanitarian or environmental goals, for example, defend public interests in protecting individuals against disease, famine, or the dangers of an irresponsible use of natural resources. These goals are therefore not, the exclusive preserve of the public sector. Certain private sector enterprises also claim to act in the public interest and may establish foundations to reinforce these objectives.

The notion of «public interest sector» mainly used in the United States, attempt to settle the difficulties raised by the limited involvement of the general government in social security schemes and the important role played in this context by private non-profit organizations. This reality encompasses public institutions on the one hand, and private enterprises on the other, but also covers a sector that does not fall under any public authority but deals with issues of interest for the whole community.

- *Mandatory vs. optional*

Revenue including compulsory contributions might be a better indicator for the measure of tax burden. Actually, from an economic point of view, government mandated contributions to private sector funds have much the same effect as social security contributions to a public operated system. However, this criterion is mitigated by the fact that in Switzerland, for example, benefits under the 2nd pillar are purely earnings related whereas in a public operated system they might be redistributive.

One could claim that there is no clear border line between the public and private sector but rather a grey zone where the competencies and role of one sector end and those of the other sector overlap.

In this situation, the task of National Accountants is to provide to users a flexible and pragmatic tool which respects the fundamental concepts, definitions, and accounting rules of any statistical system such as ESA 95 in order to allow comparing the role and size of the public sector county by country.

The table in the annex sets out a proposal to redefine the allocation of institutional units between private, public and public interest sectors based on the following criteria:

- legal form: public or private,
- public or private interest,
- profit or non-profit institution, and
- mandatory or optional contributions (relevant for social security schemes)

Of course, for each combination of these criteria it would be necessary to decide where a given institutional unit must be allocated. In this document, the proposal is limited to the cases most frequently observed in Switzerland and in particular for institutional units related to the Swiss social security system.

This approach actually developed by the Swiss Federal Statistical Office does not propose to redefine the sectorization set out in ESA 95 but it seeks to provide additional information in order to answer for example the following questions:

- the share of the public sector in term of total output, value added, saving or net worth in the total economy;
- the deficit and the debt of the public sector compared to GDP;
- the size of the social security system including mandatory private social security institutions;
- taxes burden as well as compulsory and mandatory contributions levied by the public and the private sectors (including private social security units)
- allocation of subsidies as well as other distribution and redistribution of income inside the public sector (intra-sector) and with the rest of the economy (extra-sector)
- Efficiency of the public sector compared with the rest of the economy

The final objective is to allow politicians and experts involved in the re-examination of the functioning and the financing of the public sector and in particular national social security systems to work with reliable and internationally comparable data.

Main references:

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Institutional sector (According to ESA 95)		**Public legal form**	**Public Interest**	**Non-profit**	**Mandatory**	**Public sector / Private sector**	**Sub-sector**
S.11	**Non financial corporations**	N	N	N	n.r.	Private	
		Y	(Y)	N	n.r.	Public	C
S12	**Financial corporations**						
S.121	Central bank	?	Y	?	n.r.	?	
S.125	Insurances and pension funds	N	N	N	N	Private	
		N	Y	N	Y	Public	B
		Y	(Y)	N	N	Public	C
S.122/3/4	Other financial corporations	N	N	N	n.r.	Private	
		Y	(Y)	N	n.r	Public	
S.13	**General government**						
S.1311	Central	Y	Y	Y	Y	Public	A
S.1312	State	Y	Y	Y	Y	Public	A
S.1313	Local	Y	Y	Y	Y	Public	A
S.1314	Social security funds	Y	Y	Y	Y	Public	A+B
S.15	**NPISHs**	N	Y	Y	(N)	Private	D

A : General government sub-sector
B : Social insurances sub-sector
C : Public corporations sub-sector

A + B + C : Public Sector
A + B + C + D : Public interest sector

"Does Size Matter? Assessing the Real Importance of Government"

Michael Ward [1]

Outline

This paper argues that the focus of the current debate should be as much on "responsible" government as it is on the "size" of government. It highlights the continuing problem of public policy of how to make the appropriate trade-offs between money (official funds) and people.

Since the early 1970s, the decline in the importance of Keynesian thinking on macroeconomic policy and corresponding fall from grace of centralized public investment planning has led to less attention being paid to the traditional notion of 'responsible' government and more emphasis being accorded to the question of 'efficient' government. In many instances the pursuit of efficiency gains has resulted in cost cutting, driven indiscriminately by where costs could be cut rather than where productivity gains should be made. Moreover, where alleged productivity improvements have been achieved according to pre-selected per capita performance indicators this has frequently been at the expense of service quality if the public's own assessments of 'public services' can be taken as any guideline. Reducing official performance assessment to per capita indicator measures, furthermore, only normalizes and standardizes the procedure and provides an insecure basis for determining whether the policy targeted potential beneficiaries are really being effectively reached by government action.

There is a widely held impression, regularly promulgated by free enterprise interests and certain politicians, that governments are generally bloated, inefficient, often unnecessarily intrusive and all in all too large. Few criteria are put forward by which such judgments are made and the principles are "fuzzy". The available official data from the IMF's Government Finance Statistics Yearbooks certainly focus analytical attention on accountability in providing detailed statements of government revenues and expenses on current and capital account. But, elsewhere, little effort is made to define exactly what is meant by 'large' and why this, in government, is undesirable. This paper suggests that a more detailed assessment of where governments place their resources first needs to be undertaken before any conclusions can be drawn. It also argues that time and circumstance may have an important bearing on what is considered 'normal' in terms of government outlays. In some ways, it is the statistician's own inability to attach any real economic significance to official outlays, to quantify the importance of public goods and services and of the social amenities provided by the state that is partly to blame. Statisticians have been unable, until recently, to evaluate the effectiveness with which non-market goods and services are delivered to the public and assess their valuable impact on society. The lack of appropriate performance measures and the continued inadequacy of many of those in place still hinders relevant analysis. There is, in addition, the need to make a clear distinction between input expenditures, which are recorded, and output values which are not. More importantly, there should be independent assessments of the real impact of government activities.

1. Introduction

It is evident, even without the precision given by the necessary detailed statistics, that governments play an important role in every country. Through the decisions they make, their activities and interventions in everyday affairs, government operations permeate almost all spheres of economic, social and even cultural activity. Their influence is both direct, in terms of official spending choices, statutory regulations and behavioral surveillance; and also indirect, in terms of the political ideology, culture and philosophy an administration upholds or repre-

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sents. In one of its more neutral and 'objective' publications, World Development Indicators 2003 (WDI 2003), The World Bank states "there is no 'right size' for government". This is because, as the Bank readily acknowledges, each country has a unique history and culture. All countries have different economic and social development objectives, different institutional characteristics and face different political circumstances. Each nation begins from a different foundation and yet the history of modern government is probably no more than two centuries old in any of them.[2] Outside the realm of military adventurism, it could be argued that most governments do not begin to assume an all pervasive authoritative role until the Great Depression era of the 1920's and thirties.

It is then that governments attempt to take over a more commanding control of economic management, not least because the political parties of the time realize that the well-being of the country would determine their own political survival in the future. It is, however, the onset of Keynesian economics and later priorities of a postwar reconstruction program that really establishes the central role of government. Government goes beyond the simple physical rebuilding of war damaged property to encompass major social change and the creation of a new society.[3] Postwar revitalization establishes the central power of government as the dominant force managing the nation state. This prime position is similarly reinforced elsewhere in Europe by the widespread adoption of central planning and the Welfare State and parallel creation of state controlled public enterprises and nationalized industries. It involves regulation, rationing and the selective (sometimes means-tested) distribution of benefits.

Given the strategic role of government in policy making and the importance of this to individual and social well-being, it is curious that the scope of government activity is so poorly and inconsistently measured. The conventional measures of government activity in the public domain do not reveal adequately the extent of this involvement or even the total size of government, except in one or two cases where special in-depth studies have been undertaken. There are still no genuinely comparable international measures of the size of government or its production. The measures in most widespread use depend on various national ratios such as 'government outlays as a share of GDP or GNP'[4]. These figures suffer from two important defects; first, the numbers on which they are based are expressed in local currencies and, second, they rarely cover all spheres of general government activity and relate only to central government (see Box 1). In addition, the accounts from which they are extracted could be drawn up on either an accrual or cash basis. For consistency with the System of National Accounts (SNA 93) standards with its recognized definitions of economic aggregates, all government financial data should be compiled on an accrual basis.

BOX 1. The different levels of government

There are several levels of government related to different constitutional, institutional and administrative models of social and political organization. In all countries, there is usually a central or federal layer of government through which the core national decisions that have widespread applicability are channeled. Under this, there normally exists, especially in larger and more populous countries, a state or provincial layer of government responding primarily to regular outlay commitments for the regional provision of services. Below that, a further level dealing with county, district, city, urban, and municipal government matters as well as councils responsible for rural district and local parish affairs can be found.

There is, by definition, only one central or federal government system but there may be a multiplicity of other similar subcomponent government structures representing different levels of jurisdiction and authority. The IMF's Government Financial Statistics Manual recommends that a distinction be made only between "Central Government" and "Local Government". In consolidation, the two together, since they encompass all the various layers of government, should be referred to as "General Government".

The issue about local currency measures is an important one. It is readily observable from individual experience that, at existing exchange rates, some countries are more expensive than others. This is borne out by the statistical evidence collected over successive phases, covering more than three decades of surveys, of the International Comparisons Program (ICP). This shows that price levels differ significantly - and consistently - be-

[2] In Britain, for example, it can be said to date from the 1832 Reform Act. This effectively transferred the balance of power from the traditional hands of the landed aristocracy into those of the emerging industrial middle classes although, already by then, the government was implementing policies "to control" poverty and looking to means to repeal the Corn Laws and the Humanitarian movement was urging social reform.

[3] The postwar Labor Party in Britain introduced sweeping social change through the Full Employment Act and Beveridge Plan, the 1944 Education Act, and establishment of a National Health Service. This was widely referred to by observers as "The New Jerusalem" (after the famous hymn) with its vision of establishing a 'promised land").

[4] More correctly now, in line with the 1993 Revision of the System of National Accounts (SNA 93); Gross National Income (GNI).

tween different countries. More than this, the ICP produces compelling evidence to the effect that relative price levels can also vary considerably within countries. Thus the level of investment goods prices in some countries (particularly those with low incomes and undiversified economies) is often much higher than those for other groups of goods and services and expenditure categories, such as food or clothing. The problem may be especially marked in the case of government output because there is, realistically, no meaningful price at which the services and amenities provided by government can be coasted. Only the actual expenditures (as reported) incurred in supplying such goods and services can be identified. Thus, conventionally, the output of government "non-market goods and services' (see Box 2) is measured in terms of the cost of supplying them, i.e., at their basic input cost.

Box 2. Market and Non-market Conditions

Just as in the regular market where the price of a product is related to the efficiency with which it is produced and distributed, the actual cost and effectiveness of various official non-market services is affected by the efficiency and productivity with which government services can be delivered. Thus, in terms of the unit cost of providing a non-market service, some governments are able to produce more education and make better health provisions (however defined) than others. Often the reason for this is because the staff are better trained, the services is better managed, and there is a greater degree of technical back up and professional support underpinning the delivery of the service identified.

In the regular market, the constant pressure of competition tends to make sure that, over the long run, products are delivered efficiently. Moreover, these products end up being priced by the market and produced by those units most able to supply the market. But, in the area of non-market services, such a test does not automatically apply. The government is notably the sole supplier and some of the products concerned are unique. The effective utilization of scarce resources in the delivery of non-market services is difficult to measure, but it is evidently linked to an assessment of the quantity and quality of outcomes in relationship to the cost and amount of inputs utilized. In practice, it is often necessary to resort to proxy indicators of output and performance to measure an intrinsically unquantifiable outcome defined by official policy. If, because of the nature of the service rendered, there is a fixed proportionality between outputs and inputs, the output of services can be measured by the cost of providing them. The assumption here is that the more expensive the inputs the higher the cost and hence greater the assumed value of the final output to consumers.

This emphasis on cost poses yet a further problem for interpretive analysis insofar as some governments are more efficient and better able to provide higher quality public goods and services in areas like education, health and crime control than others. Clearly, in these cases, the legacy of public service management, inherited traditions of public service in the community and individual integrity play an enormous part. For this reason, the Bank argues that "more important than the size of government is its effectiveness" (WDI 2003). If public institutions function poorly, government is weak and officials are corrupt, governments will be rightly criticized and condemned. Not only will their own activities fall short of requirements and perhaps progressively deteriorate but private enterprise will also be stifled and corporate investment, both domestic and foreign, will be discouraged. Money and resources will flow out of the country and economic growth and social progress will be adversely affected.

In the 1970s, following the fall from fashion of planning as a means of securing progress and as a way of avoiding service duplication and the wasteful use of scarce resources, the whole role of government and of conventional macroeconomic policy itself began to questioned. Government was considered in some developed countries to have grown too big, its involvement in welfare provision too intrusive and extensive (the "Nanny State") and its operation of various social and communal services inefficient. Government services were deemed inferior to similar parallel services provided by the private sector, especially in education, energy supply and transportation. Governments succumbed to the traditional criticisms frequently made by opposition politicians of being profligate, too bureaucratic and inefficient. Moreover, many governments were mired in so much debt that current levels of public sector borrowing were considered unsustainable, thus putting monetary stability at risk. The perceived answer to these problems was to sell state assets; privatize (wherever possible) government services (and particularly those provided to individuals and households) and, generally, outsource and sub-contract as many of the traditional functions of government as possible. This went on to include such diverse activities as security services, waste disposal, street and office cleaning, public water supplies, etc.

The 1980s saw the broad acceptance of the free market doctrines espoused by the Reagan-Thatcherite regimes and marked the beginnings of the so-called "Washington Consensus" with its Stentorian demands for fundamental structural adjustments. This clarion call for widespread privatization was essentially ideological; there was little real evidence that government involvement in the economy was "excessive" or that the private sector

might perform such functions cheaper and more effectively. There is still no evidence to this effect. Many of the activities taken on by the private sector have simply resulted in greater selectivity, poorer services to "non-economic" areas and the shifting of some of the burden of supply and related distribution costs onto the general public. It has made environmental protection more difficult to enforce and maintain.

The philosophy seemed based on a perception that people are careful individually when spending their own money but more spendthrift when it comes to collective expenditure and using other people's general savings. But a policy of public parsimony is misconceived. It ignores entirely the distinction between market demand (backed up by a willingness to pay) and basic need. It also ignores questions of social justice. Contemporary evidence from consumer surveys suggests that, as a whole, people are not able to decide how best to spend their own money because, taken overall household debt exceeds household incomes, even in many well developed countries. And personal debt continues to grow, not least at the instigation of government cheap money policies. Advertising, the media, and the more extensive availability of a wider range of loan instruments (some of dubious validity) have all contributed to what has become in several countries a chronic problem of over-spending and one of increasing concern to policy makers. The willingness of households to fall deeper in debt has been significantly encouraged by the efforts of some governments to expand aggregate effective demand by encouraging increased consumers' expenditure. The moral value of such official actions, in the context of achieving greater societal well-being and equity, as well as environmental sustainability, can be seriously questioned.

More to the point, evidence pointing to an "enlarged" or ever inflated government is weak. Taking the OECD countries for which data exist, there is no relationship between population size and the share of general government expenditure in GDP or between population and the relative importance of central government. Significantly, for the EMU, the share of general government final consumption in GDP remains exactly the same in 2001 at 20% as it was in 1990. Moreover, for the world as a whole, the estimated share actually increases from 17% to 18% (Table 4.9, WDI 2003) although, since this is a weighted ratio, the measure is affected by the economically largest countries such as those in the OECD. It suggests that either "downsizing" does not work or the cost of outsourcing to private operators has turned out to be no cheaper than performing the task in the public sector.[5] The alleged efficiency gains are hard to determine.

This view, however, may be too simplistic and to build up a more appropriate picture of the role of government it is necessary to draw a distinction between the individual consumption expenditures of government, outlays made for and on behalf of households and persons, and the collective consumption expenditure of government. The former outlays add to the welfare of specific groups of people, the latter are officially incurred for the benefit of the community as a whole. This separation makes the important distinction between who consumes a good or service and who pays for it, i.e., the difference between "use" versus "cost". Table 1 defines these two elements while Table 2 provides a more detailed description of which of the various government functions and respective services they provide constitute "collective services" (CS) and which represent "individual services" (IS).

Table 1 Who Consumes versus who spends

	Final consumption expenditure	***Actual final consumption***
Households	Individual consumption expenditure by households	**Actual individual consumption** ***Equals*** individual consumption expenditure by households, ***Plus*** individual consumption expenditure by NPISHs *Plus* individual consumption expenditure by government
NPISHs NGOs	Individual consumption expenditure by NPISHs	None
Government	Individual consumption expenditure by government Collective consumption expenditure by government	**Actual collective consumption** Equals collective consumption expenditure by government

[5] There are unexplained discrepancies between different international sources as to the relative size of government and these often differ from measures published by the individual countries themselves.

Table 2. Collective Services (CS) and Individual Services (IS)

COFOG 98 Groups	
01.	**GENERAL PUBLIC SERVICES**
01.1	Executive and legislative organs, financial and fiscal affairs, external affairs (CS)
01.2	Foreign economic aid (CS)
01.3	General services (CS)
01.4	Basic research (CS)
01.5	R&D General public services (CS)
01.6	General public services n.e.c. (CS)
01.7	Public debt transactions (CS)
01.8	Transfers of a general character between different levels of government (CS)
02.	**DEFENCE**
02.1	Military defense (CS)
02.2	Civil defense (CS)
02.3	Foreign military aid (CS)
02.4	R&D Defense (CS)
02.5	Defense n.e.c. (CS)
03.	**PUBLIC ORDER AND SAFETY**
03.1	Police services (CS)
03.2	Fire-protection services (CS)
03.3	Law courts (CS)
03.4	Prisons (CS)
03.5	R&D Public order and safety (CS)
03.6	Public order and safety n.e.c. (CS)
04.	**ECONOMIC AFFAIRS**
04.1	General economic, commercial and labor affairs (CS)
04.2	Agriculture, forestry, fishing and hunting (CS)
04.3	Fuel and energy (CS)
04.4	Mining, manufacturing and construction (CS)
04.5	Transport (CS)
04.6	Communication (CS)
04.7	Other industries (CS)
04.8	R&D Economic affairs (CS)
04.9	Economic affairs n.e.c. (CS)
05.	**ENVIRONMENT PROTECTION**
05.1	Waste management (CS)
05.2	Waste water management (CS)
05.3	Pollution abatement (CS)
05.4	Protection of biodiversity and landscape (CS)
05.5	R&D Environment protection (CS)
05.6	Environment protection n.e.c. (CS)
06.	**HOUSING AND COMMUNITY AMENITIES**
06.1	Housing development (CS)
06.2	Community development (CS)
06.3	Water supply (CS)
06.4	Street lighting (CS)
06.5	R&D Housing and community amenities (CS)
06.6	Housing and community amenities n.e.c. (CS)
07.	**HEALTH**
07.1	Medical products, appliances and equipment (IS)
07.2	Out-patient services (IS)
07.3	Hospital services (IS)
07.4	Public health services (IS)
07.5	R&D Health **(CS)**
07.6	Health n.e.c. **(CS)**
08.	**RECREATION, CULTURE AND RELIGION**
08.1	Recreational and sporting services (IS)
08.2	Cultural services (IS)
08.3	Broadcasting and publishing services **(CS)**
08.4	Religious and other community services **(CS)**
08.5	R&D Recreation, culture and religion **(CS)**
08.6	Recreation, culture and religion n.e.c. **(CS)**
09.	**EDUCATION**
09.1	Pre-primary and primary education (IS)
09.2	Secondary education (IS)
09.3	Post-secondary non-tertiary education (IS)
09.4	Tertiary education (IS)
09.5	Education not definable by level (IS)
09.6	Subsidiary services to education (IS)
09.7	R&D Education **(CS)**
09.8	Education n.e.c. **(CS)**
10.	**SOCIAL PROTECTION**
10.1	Sickness and disability (IS)
10.2	Old age (IS)
10.3	Survivors (IS)
10.4	Family and children (IS)
10.5	Unemployment (IS)
10.6	Housing (IS)
10.7	Social exclusion n.e.c. (IS)
10.8	R&D Social protection **(CS)**
10.9	Social protection n.e.c. **(CS)**

This important distinction in spending was always made in the ICP where the existence of major institutional differences between countries regarding the extent of government involvement in the economy was recognized from the outset. It was not until 1993, however, that the same distinction was incorporated into the international system of national accounts, SNA93. As the role and scope of government has changed over the past decade or so, the importance of maintaining this separate treatment has clearly increased.

It should be noted that the "collective consumption" of government basically represents the administrative overheads of running the bureaucracy plus the cost of military defense. This includes the maintenance of internal law and order (and justice) and outlays to ensure the long term environmental sustainability of the country. This component clearly varies in relation to whether the country is able to maintain peaceful and harmonious relationships with its foreign neighbors. It is also affected by the extent of its international obligations and treaties. Especially in the Middle East and in several African countries, such as Angola, Eritrea and Liberia, there has

been a high level of military expenditures both as a share of GDP and as a percentage of central government expenditures, particularly over the past-decade. In some cases, this has obviously squeezed out more desirable social outlays. In most Middle East countries, armed forces personnel make up between 5% and 10% of the labor force and represent an even higher proportion of those in active paid employment. War, and the threat of war, clearly explains "size" in this respect. Furthermore, because of secret accounts, off-budget outlays, and specific code allocation and item switching, the amounts represented as military expenditures are probably underestimates. In domestic prices and often artificially determined 'contract' price terms, the amounts allocated to military spending as a share of GDP tend to remain fairly constant in peace time.

Elsewhere under the broad category of "collective consumption", it may be possible, through detailed historical analysis, to determine profligacy and certainly, from the official accounts to trace budget overspending although this is not necessarily the same thing) and perhaps inefficiency. The public sector itself has developed an array of performance measures, usually benchmarked against specified standards or base reference periods, by which to monitor its own efficiency. The problem is that many of these indicators serve only as proxies and are not good measures of output and, least of all, of the genuine impact of government spending on the country. Even where the overall cost of performing a particular collective service could be seen as going down, which might well show up in a positive way as a decline in a defined 'bureaucracy" indicator, the real outcome could be spell economical and social disaster – as in the case of the issuance of British passports in the year 2001, or political payments made to teachers in Chile in the l990s.

The key concern from a welfare perspective is whether 'size' is reflected in the increased spending on behalf of the individual consumption of households – especially if such allocations represent an increase in real terms and thus lead to enhanced levels of human well-being. This reflects the role of government as the good Samaritan, arbiter of social need, protector of the meek, and the ultimate guardian of distributive justice. Quite apart from the desirability of providing public health and education – health because no one voluntarily chooses to be sick,[6] and education because it represents investment in human capital for the broader benefit of society - such social outlays contribute to reinforcing the strength and quality of human capital and civil society as a whole.[7]

Ultimately, it is only possible to assess "size" in relation to the resources needed to produce a given output, i.e., to do a specific job. And, if that job is deemed necessary or essential, whether it can be performed better using alternative procedures. In this area of analysis, realistic "counterfactuals" and alternative simulations are rarely readily available, although governments are likely to have better information at their disposal (and use it) than private operators.[8] At best, measures of individual government outlays can be compared with the past and assessed against what has happened in other countries, always providing the sources of information are similar and the standards of classification are the same, to determine progress.

The accompanying tables attempt to give a better indication, therefore, of the value of government outlays in more comparable purchasing power parity (PPP) equivalent terms using the same reference years and a standard data framework, the SNA 93.[9] The tables try to show, if only approximately, the difference in magnitude between shares in nominal local currency values and those in adjusted PPP international dollar terms. It must be borne in mind that published government outlays are expressed always in local costs and prices but that in the case of the PPP adjustments, the relative prices of goods are converted using "representative" PPPs. These are based on the observed prices for similar goods quoted on the market in each respective country to generate the desired price ratios in their respective local currencies.

[6] Illness is often correlated with lifestyle, part of which – like smoking and drinking or driving recklessly – is under individual control. Sickness is also occupationally related and may be partly the result of official industry and employment policy.

[7] This is closely connected to the desire of policy makers to determine the role of government as an agent for good in society in fairly distributing non-market goods and services. This is more than simply providing these goods collectively to the community and individually to citizens. It ensures that services are offered or distributed at least equally to all echelons of society, irrespective of class, creed or income level. The need for 'fairness' is well borne out by the experience of many developing countries over the past half-century. The unhappy chapter of social upheaval accompanying the process of economic transformation associated with political transition in many of the former centrally planned economies of the Soviet Union and their move to market oriented economies provides a salutary case in point.

[8] In some poorer countries pursuing of the path of development, governments seem to have been either institutionally shackled by the range of controls and potential power at their disposal or have used that same power to secure their own survival and advantage. Corruption is thus the further evil that superimposes its own unacceptable influence over bureaucratic inefficiency. This only adds to the suffering and plight of the least advantaged inhabitants of a country who usually have little say in the social allocation process.

[9] It should be noted that even in adjusted PPP terms, comparisons based on "shares" of GDP (or similar national aggregate) cannot be determined if an EKS rather than a Geary Khamis formula has been used to aggregate component expenditures. The tables are marked accordingly where this principle is violated.

Using PPPs is one of the main ways to establish whether the government is doing a good job and if its size is excessive. It helps to determine who benefits from a government's engagement in the economy and whose interests are not so well served by official actions to socially reallocate available resources in ways different from those determined by the operation of the market and, so-called "free enterprise".[10]

Tables 3 & 4 provide some of the empirical basis for observations made in the preceding discussion.

Table 3 shows that, of the countries selected, only in Greece and Turkey was the price level of government lower than that for the economy as a whole. In all other countries chosen and indeed, for the rest of the European Union and OECD, the cost of running government was higher than other outlays on CrDP. This is mainly because the labor component in government, because it is dominantly a service sector, is proportionately higher than in other areas of economic activity. Over time, too, the general level of wages and salaries tends to grow faster than the price trend, for goods in general and this is captured in the increased cost of government. In addition, governments are statutorily required to recognize and perform certain mandated functions and tasks which, by their very nature, are more expensive than similar activities carried out by the market. In large part this has to do with cost of delivery of services and amenities to a shifting demographic structure of young people and the aged of both sexes. This feature, along with other independent and autonomous factors that impact on final demand, exerts a strong influence on the cost of providing government goods and services to the public.

The more detailed table 4 shows that, within government expenditures, quite apart from the expected variations in the cost of running government in countries with different cultures of public service, there are significant differences between the 'collective' (mostly overhead administrative) cost of government and the actual direct services outreach of governments to their citizens. A derived "coefficient of bureaucracy" essentially compares the infrastructure overheads of government and overall policy management expenditures with the cost of operating services that are supplied to households directly for their own use. It can be seen from this table that in the relatively more advanced, higher income countries, this coefficient is below 1.00 whereas, for Greece and Turkey, it is well above this level of cost equivalence. One reason for this may be that the richer countries are better able to reap economies of scale but, more likely, the higher collective consumption outlays in the lower income countries are a reflection of the different public sector institutional culture referred to that accords a higher priority to military spending. This is well borne but in Section II of the table where outlays on defense are seen to be significantly higher in relative terms in both Greece and Turkey. Correspondingly, education and health expenditures, both in aggregate and as a share of GDP per capita, are considerably higher (not surprisingly) in the richer countries of Europe.

The choice of the term "bureaucracy" in such a measure may not be the most apt since it conveys certain unhelpful associated connotations. But the measure effectively summarizes the respective official resource allocation choices countries make and neatly captures the relative efficacy of how well governments provide for the delivery of social services to households in their respective countries. (As might be expected, Sweden and Norway where higher real outlays costs are also probably embedded in the estimates, emerge as leading providers of the non-market goods and services traditionally enjoyed by the public). The measure is also relevant to the monitoring over time of the relationship between the collective consumption of government and the individual consumption of households. Outside the arena of the immediate European Community-OECD comparisons, this measure is especially relevant to assessing the conduct of government operations in the poorer developing countries. The task of fulfilling the Millennium Development Goals must devolve, inevitably, to governments and not to the private sector. If governments are stripped of resources for one reason or another, many of the goals will remain unattained and inequalities will persist.

[10] It should be noted that "private enterprise" should not be confused with "free enterprise". Newly privatized government operations frequently enjoy a monopoly status that is granted either de factor or de jure in the early years of operations (usually on the grounds that the market is perceived as too small to support even a single enterprise of technically optimum size).

Table 3. Relative Price Levels and Shares of Government in GDP in Selected Countries (EU 14 = 100)

	Austria	Greece	Luxembourg	Spain	Sweden	Turkey	Norway
GDP Price Level	102	76	106	80	118	46	119
Price Level of Government	112	96	155	108	110	75	113
Price Level for Individual Consumption	112	92	150	100	108	69	112
Price Level for Collective Consumption	113	99	160	106	115	78	115
Real share of Government in GDP	17.5	15.8	11.0	16.1	24.4	20.3	18.8
Nominal share of Government in GD	19	15	22(e)	17	27	14	19

Notes: (e) Estimate based on Belgium

1. The average price level for government as a whole reflects the relative real importance of 'actual individual consumption of government compared with the 'collective consumption' of government. Thus, in Sweden, the former is more important in real terms whereas, in Turkey, the latter has greater significance.
2. These price level measures are based on the Geary-Khamis formula and thus, for individual countries, is consistently aggregative to the level of GDP, an essential property for calculating real shares of GDP.

Table 4 Key Indicators of Government Performance For Selected OECD Countries (1999-2001)

		Austria	Greece	Luxembourg	Spain	Sweden	Turkey	Norway
I	**Core Structure of Current Government Expenditures**							
	1. Indices of NOMINAL find expenditure per head (OECD=100)							
	- Individual Consumption	157	36	232	77	267	7	251
	- Collective Consumption	112	62	176	64	116	16	134
	2. Indices of REAL final expenditure per head (OECD=100)							
	- Individual Consumption	148	57	161	97	227	23	213
	- Collective Consumption	111	97	134	87	99	51	116
	3. Coefficient of Bureaucracy (OECD=1.00)	0.75	1.70	0.83	0.90	0.44	2.22	0.54
II	**Military Expenditures**							
	- Share of GDP	0.8	4.6	N.A.	1.2	2.0	4.9	1.8
	- Share of Central Government Expenditure	2.0	15.6	N.A.	4.2	5.4	10.0	5.9
III	**Social Outlays**							
	1. Education							
	- Public Expenditure per Primary School Student as a % of GDP per capita	25.1	16.0	17.0(e)	18.8	23.5	17.6	29.2
	2. Health							
	- Public Expenditure as a share of Total Expenditure on Health (%)	69.7	55.5	71.0(e)	49.0	77.3	71.1	85.2
	- Total Health Expenditure per head ($U.S.)	1872	884	1940(e)	1073	2179	150	2832

NOTES: (e)=estimate

The "Coefficient of Bureaucracy" is obtained by dividing the index of collective consumption by the index of individual consumption in REAL (PPP) terms.

6. Concluding comments

The essential role of a government is to improve, in the broadest sense, the efficiency for its citizens, to make markets work properly and to address externalities such as pollution and congestion and other collective problems that cannot be resolved by negotiation between individuals acting solely in their own capacity. A constant cry of most citizens is for a lean and efficient government that will serve mainly as a facilitating and enabling institution. People look for an authority that offers them protection under the rule of law rather than the alternative of a rule of power. Governments are expected to also provide essential goods and services that cannot be supplied by the market.

In the absence of appropriate information on the effectiveness of public outlays, people's faith in the government's ability to deliver useful services of personal value has been undermined. This has helped preserve media induced perceptions about the cost of government and its ineffectiveness. But the fact that people tend generally to think of government being "too big" is primarily the outcome of an ideologically influenced propaganda that views private enterprise and the role of markets to be more efficient and less wasteful in the allocation of resources and meeting their specific needs. Such a view takes for granted the efficacy of the economic system and the effectiveness of the 'invisible hand' to guide choices and distribute scarce resources both efficiently and fairly. This misses the point, even if it leaves more money in the hands of households to spend in what way they will.

This paper suggests that not only are issues of distributive justice made more relevant by government intervention but that if comparative assessments of public expenditures are conducted using internationally comparable purchasing power parities (PPP) indicate, better than any analysis of relative outlay shares in domestic prices, these will indicate the real value of government activity in supporting household well-being. The paper also argues that a true view can only be obtained if the analysis extends to a concept of general government that comprises all organs of government and is not confined solely to evaluations of the spending decisions of central government alone. The conclusion is drawn that there are no real criteria and very little evidence, given the present parlous state of statistics in this important area, to assess whether governments are too large and need to have the scope of their activities trimmed. There is also no evidence to show that individuals, in the interests of the well-being of society and environmental sustainability as a whole, are better capable of knowing how to spend their money than the state.

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24TH CEIES SEMINAR: "THE SIZE OF THE GOVERNMENT SECTOR – HOW TO MEASURE"

Summing up by A. Franz

OVERVIEW

The opinions presented in the papers and also put forward in the discussions at the seminar can be divided into three or four major **groups**, as follows:

- those **primarily** addressing **the concepts**, further distinguishing:

  "Defenders" (compliant with *status quo*)

  "Reviewers" (more critical)

- those primarily addressing more **practical problems**
- **the more descriptive contributions**

Concepts

Defenders

As *"defensores fidei"* they take a more "conservative" view, in principle maintaining that the present big standards (SNA, ESA, GFS) are sufficient if properly applied; it is no surprise that this view is mainly found on the part of the representatives of the organisations.

IMF: Now more closely integrated in the SNA as well as providing more analytical points of reference, the new **GFSM** (Manual on Government Finance Statistics) provides a stronger systematic view with a variety of possible measures. It should, therefore, provide a more appropriate conceptual reference, in particular for in-depth analysis of budgetary policies. Most interesting: "stock measures" have been stressed in particular (see later). Deservingly, a topical review is also presented there of related **literature** on both the size and the growth of government.

ECB: Also strongly supports the present standards, particularly referring to its **Guide on Government Finance Statistics** (annual). Priorities mentioned would seem largely agreeable (public enterprises; classifications; etc). A variety of measures can be derived within this framework. Particularly interesting: concept of successively extending measures (see later). The need for further work on accounting standards as well as for additional information is recognised.

EUROSTAT: "**ditto**"; gives an interesting account of common problem cases in practical statistics of this kind; and a lot of ranking data, drastically showing the dependence of the measures on conceptual variation.

ILO: inevitably **employment** comes to one's mind in this context, too, but ILO takes a more reserved position, in view of the continuing weaknesses of such comparison: not only different country circumstances/practices, but also specific advantages/disadvantages of each type of source, which must be taken into account (perhaps with a slight preference for LFS-based data).

However, this is not to say that there was no more critical or evolutionary point put forward in these papers (see below).

Reviewers

R. Hjerppe: may perhaps not agree with this classification (viz among the "reviewers"); but reference is made to the strong point he made with a view to **wealth-**related measures; and **extended** measures at large, and the importance of a more "holistic" view in this context.

(Paper itself is particularly comprehensive, concrete, and easy to read – therefore: a really rich and helpful key note! See later, too.)

To some extent, **ECB** and **ILO** can also be mentioned among the "reviewers": the former with their proposals for "**extended measures**" and even accounting standards; the latter with the various factors still giving rise to poorer comparability of **employment** figures (inadequate recording in the sources; omission of productivity, etc), in spite of the clear importance of such measures.

S. Sergeev complains about limited comparability of government expenditure in the International/European Comparison Project (ICP/ECP), even for the MS. Little **methodological advancement** if any at all has been achieved in decades. The central problem is productivity differences not recognized by the now predominant methodologies, which is not only a methodological facet but a more important point if denied by concept.

A. Pritchard would generally prefer a **tax revenue-**based comparison measure, not suffering from deficiencies of the others whether due to their denominator or their enumerator.

M. Ladaique (OECD) addresses a more specific feature, viz the representation of tax ratios, and in particular of **Social Expenditure** in harmonised comparable terms (and he seems to be right!). Application on the GDP level, too, could be argued.

In a similar field, perhaps less pronounced but still in the vein of more principal criticism, **R. Meier**/**G. Gamez** look for more **flexible** (=sector extending) **handling** of borderline cases like SS systems run under private auspices.

A quite comprehensive discussion is given by **B. Kuhry**. Among a variety of alternatives in practical use in his institute, perhaps the statistical concept of the **quaternary** sector is most interesting, intending dealing with government more embedded in the rest of the economy.

M. Ward is perhaps most pronounced in defending – but more of the political concepts of government today than of statistical measurement. However, even on a macro level there are severe **limitations** (local currency, productivity). Actual consumption (as used in the ICP) would, usually, be a relatively more attractive measure.

Practical Problems

Largely the **same authors** as before may be mentioned, too, but with different focus; in particular:

R. Hjerppe points out **three dimensions** of measurement:

- institutional;
- functional;
- commodity.

Attention is necessary to each of them, or better all together. In addition, a useful **list** of areas raising particular measurement issues is given (e.g. supra-national level, funds, PPP, hybrids of any kind).

With similar singular points: **IMF, ILO** and **Eurostat** may be mentioned there, too.

B. Kuhry pleads for more (even very) detailed analysis (notwithstanding serious aggregation problems, however).

Descriptive contributions (resuming the history; exploring the options; describing the actual practice)

In this context, there are two papers, each from an accession/candidate country (CZ, HU), and in this perspective quite interesting in this context, too.

Obviously, their problems have quickly assumed similar character as in the case of the more traditional users of those concepts.

COMMON FEATURES OF THE CONTRIBUTIONS

It could not be expected that "fundamentalist" questions would come into the forefront, like "What is government at all? How is it therefore to be shaped in statistics? What is still missing?"; nor even to meet a more realistic but still ambitious agenda as outlined in Mr Glatzel's opening address. But still such reference points were always in the background, and one might hope that there is some contribution towards progress. This summary is attempted in such a perspective, notwithstanding the difficulties of weighing pros and cons, and in such a short time to look for a successful outcome of the Seminar.

There was hardly if any significant criticism of the **major standards** (which are essentially **NA/GFS**). However, in particular the SNA aims at describing the overall economic machinery rather than giving an in-depth analysis of specific compartments of the system in their own right. Largely overlapping in terms of presentation, the role of each of the Manuals (and the often largely similar measures based on each) could be reconsidered (cycle of budget accounts GFS SNA/ESA).

There is no likelihood as yet of an "**ideal**" (let alone, "only true") government notion, to serve as a general or abstract measurement rod. Even if hypothetical, anything of this kind is itself a compromise (conventional solution).

Government is **multi-facetted** (functional; regional; economic; client groups, etc): thus it does not allow for a measure that is singular, comprehensive ("once for all"), etc.

There are many complaints about **limited comparability**, due to supposed deviant interpretations and practices, but there is much less (if any) **systematic investigation** into the very reasons and deficiencies so far.

Particular needs of analysis as well as specific circumstances in countries may suggest **more particular, more flexible** solutions for delineation of "Government" or "Public Sector" at large, which are not automatically found in those standard systems.

Some particularly **novel/outstanding** ideas/proposals?

- **extended measures**, or even;
- a comprehensive Government **Satellite** (Hjerppe; HU);
- **detailed empirical** approaches to start from pragmatically (in particular for productivity; Kuhry).

Some "**underexposed**" areas? A possibly somewhat subjective selection might come out as follows:

- sector criteria as such (the operational side)[1];
- institutional x functional overlap (is there a "comparability-proof" standard scope?)[2];
- aligned treatment of government in related statistics, like business surveys, HICP, social statistics (SS).

No solution has really yet been found for certain subjects of frequently used comparison, such as: output measurement/productivity adjustment; identification of complex statistical units at the borderline and/or with mixed activities/or outsourced; and even employment.

There were repeated complaints about the importance of taking into account the role of **regulation** imposed on the public, as an alternative of immediate government action. However, this seems also still far from operational feasibility.

The same applies to the old *desideratum* of **impact** measurement, the information by means of ("physical") indicators, and the like.

Notoriously difficult are data of **balance sheets/stocks**, and all the more so if revaluation is at issue. A more aggressive approach may be attempted but must, therefore, be separated from the other points.

There was concern about the imminent danger of **political** interference in the process of compilation/evaluation of the respective figures, although no immediate necessity was seen to change those key concepts such as the Maastricht criteria. And these figures alone, however, are by no means the whole story.

[1] In particular, the so-called "50%"- criterion. See also footnote 4 below.
[2] The "common denominator" problem; a matrix "institutions x functions" is necessary for a really "clear" picture.

REACTION FROM EUROSTAT

CEIES Seminar on "The size of the government sector – how to measure"

Eurostat found this seminar both stimulating and timely. There has been much concentration on government debt and deficit matters in the EU over the last few years, but "gross" measures of government are also important and may become more politically sensitive over the next few years. The standard of the papers and presentations were high, though inevitably some of the more difficult issues eluded us.

Eurostat believes that the national accounts system provides the best analytical way of examining the size of government from the perspective of economic and financial impact. The definitions of government have been developed over many years. It is true that methodological issues for government appear in a number of different manuals, and the ongoing review of SNA/GFS/Public Sector Accounting Standards is aimed at producing fully comparable guidance. This review is being undertaken jointly by the world's major statistical organisations. It has been suggested to include a special chapter in the new SNA on government, and Eurostat supports this.

Eurostat also supports the "two directions approach" suggested during the seminar – to continue ongoing technical work on such as issues as the boundary of government and tax credits, and at the same time to undertake a thorough review of the quality of government data. Indeed Eurostat already undertakes this work, and some further development of data comparability can be envisaged. Eurostat believes that, for the sake of continuity for users, it is inappropriate to re-open the "50%" criterion now, though the revision of SNA will almost certainly cover this. Eurostat also feels that consolidation has been adequately covered in previous work, but perhaps this needs to be better documented for users.

The possibility of a government satellite account, which may extend measures beyond the traditional general government, is an interesting proposal. There are clearly some users who would like to look at the "Public Sector" in more detail. However Eurostat feels that in the current climate of resource constraints, the priority should be to improve government measures within the existing national accounts system. This improvement should involve the technical points discussed previously, plus work on better measurement of government output's evolution over time (with related impact on productivity). It can be noted that very few countries produce estimates for public corporations, and this reflects their own estimation of trade-off between resources and user needs.

Eurostat has noted the demand for employment data for government, and has therefore proposed a sectoral breakdown of employment in the revised ESA95 transmission programme for national accounts data. If countries accept the proposal, there will undoubtedly be the need for further methodological work in collaboration with the ILO and OECD. This may include an examination of the "contracting out" issue.

Eurostat notes that the CEIES gave "moral encouragement" to some areas. Actually Eurostat feels that two of the issues (government productivity and balance sheets) are quite important, and will continue work on these, though of course subject to future resource constraints. Eurostat agrees that the work on regulatory and impact measurement data is still in its infancy, and that this would not be a priority area.

Finally Eurostat notes that under the "Excessive Deficit Procedure" a number of new issues will be examined over the coming months (including PPPs, pensions) and that resolution of these issues will of course be given full public exposure.

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