# Government Procurement: A Synthesis Report

*by*

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## Executive summary

Governments are significant purchasers of goods and services and these markets represent huge opportunities for international trade. Measuring government procurement for a large number of countries, in a consistent manner, is not a trivial task and careful attention must be paid to ensure that national data is gathered on the basis of harmonised procedures in all countries covered. Quantifying the size of government procurement markets becomes even more complicated when attempts are made at distinguishing procurement between government levels (central *versus* sub-central), or by types of expenditure (consumption *versus* investment), or at measuring the share of procurement that is potentially opened up to international trade (contestable). The latter indicator is meant to capture tradable purchases and excludes two categories of government purchases that are assumed to be non-tradable, *i.e.* the compensation of government employees and defence-related expenditure.

The absence of detailed and consistent measurements of government procurement markets for a large number of countries, broken down by government levels, by types of expenditure and contestable shares, represented an information gap. Informed knowledge about the size of government procurement markets and in particular the shares of national markets that are potentially opened up to international competition is relevant for the business community, governments and trade negotiators.

The challenge was addressed by the OECD Trade Committee, which undertook quantitative work that covers over 130 countries and proposes a series of detailed estimates. This report offers a synthesis of the analytical studies of the quantification of the size of government procurement markets and highlights the recent OECD quantitative work.

Based on this OECD work, the main estimates of the size of government procurement markets, expressed as percentage of 1998 GDP data or in billions of US dollars, are:

- For OECD member countries as a whole, the ratio of total procurement (consumption and investment expenditure) for all levels of government is estimated at 19.96% or USD 4 733 billion and for non-member countries the ratio is estimated at 14.48% or USD 816 billion.

● The world total procurement estimate is roughly equivalent to 82.3% of the world merchandise and commercial services exports in 1998. Country specific procurement estimates are detailed in Table 5 for 28 OECD member countries and Table 6 for 106 non-member countries.

● The ratios of government procurement markets, which is potentially opened up to international trade (contestable), are estimated at 7.57% or USD 1 795 billion for OECD member countries and 5.10% or USD 287 billion for non-member countries.

● The world value of the contestable government procurement market is estimated at USD 2 083 billion, which is equivalent to 7.1% of the world GDP or 30.1% of the world merchandise and commercial services exports in 1998.

● Procurement by sub-central governments is larger than procurement by central governments by an estimated margin of two to three times depending on the ratios being measured. These aggregated estimates for the OECD as a whole however mask some distinctive country variations.

The European Commission has carried out a number of studies on the quantification of the EU size of procurement markets and estimated its ratio of government procurement, which is potentially opened up to international trade, at 8.7% of GDP (Table 4). Based on the OECD work, a lower estimate of the EU contestable market was estimated at 8.03% (Table 5) and the difference in the estimates is mainly explained by the use of different data and assumptions regarding defence-related expenditure. The EC has had access to detailed defence-related data for its member states that distinguished between hardcore and non-hardcore defence expenditure. In the EC study, hardcore defence expenditure was considered as non-tradable whereas the OECD study has considered all defence-related expenditure as non-tradable. These results suggest that the OECD procurement estimates slightly underestimate the size of procurement markets that is potentially opened up to international competition.

In early 2000, the EC has also published a number of preliminary indicators of public procurement to measure market trends for the period 1993-1998 and the impact of public procurement policies. The EU public procurement was estimated within a range between 13.9% to 14.6%. The definition of public procurement includes procurement by public utilities (publicly or privately owned enterprises), such as water, energy, transport and telecommunications sectors. These estimates are considerably above earlier public procurement estimates made by the EC for 1994 (11.2% and 11.8%) and illustrate the careful attention that needs to be paid to the definitions used for measuring procurement markets. These results also show the relative

importance of procurement by public utilities and the potentially huge opportunities that they represent for international trade.

Measuring procurement ratios broken down by government levels is helpful for appreciating the expanded reach of the WTO Government Procurement Agreement (GPA) to sub-central government entities. Based on the OECD estimates that the sub-central governments account for about 65% of total government procurement, it is extrapolated that the reach of the WTO GPA, due to its expanded coverage to sub-central entities, is about three times larger than under the GATT Code, the predecessor of the WTO GPA.

Up until recently, the 1968 version of the System of National Accounts (SNA) was universally applied in the compilation of national economic activities in both OECD and non-member countries, albeit with considerable differences in the availability of detailed national data by countries. The 1968 SNA thus offered the potential for measuring government procurement markets for a large number of countries in a consistent manner. The 1968 SNA is now outdated and, since 1999, most OECD member countries have switched to the 1993 version of the SNA, as a basis for compiling their national accounts. Once the switch over is fully implemented by a large number of countries, it will then be possible to quantify the size of procurement markets in a consistent manner for more recent periods. In the meantime, it is doubtful that additional insights could be obtained through further uses of the 1968 SNA-based data.

The so-called "bottom-up" approach refers to the process of gathering national data on procurement expenditure directly from national entities responsible for procurement decisions. The reliability of results obtained from bottom-up approaches stem, to a large extent, from the homogeneity and consistency of the compilation and reporting processes throughout the countries subject to the notification requirements. Establishing such processes require considerable resources at least in the initial stage. The information and data obtained on the basis of surveys of notification requirements usefully complements SNA-based data and is also useful for analysing the reach of some agreements and for making country comparisons.

## 1. Introduction

Governments at central and sub-central levels and state-owned enterprises are significant purchasers of goods and services, and these markets represent huge opportunities for international trade. While the largest opportunities, in value terms, arise in the industrial countries, emerging economies, too, offer markets with considerable potential. There are few studies on the quantification of the size of government procurement markets but their results are not necessarily comparable as different

definitions of procurement are used. Furthermore, these studies usually focus on a very limited number of countries, the period covered is fairly outdated, and detailed estimates of procurement by sub-central governments are either not carried out or are simply ignored.

Measuring the size of government procurement markets for a large number of countries, in a consistent manner, is not a trivial task and careful attention must be paid to ensure that national data is gathered on the basis of harmonised procedures in all countries covered. The absence of consistent measurements of the share of government procurement markets that is potentially opened up to international trade (hereby referred to as the contestable share) for a large number of countries, broken down by government levels, represents an information gap that needed to be addressed.

Government procurement traditionally tends to favour local suppliers; by limiting import competition, it has effects similar to other protectionist measures, introducing distortions that limit choices, increase prices and discourage economic efficiency. In recognition of these costs it imposes on national economies, efforts at bringing government procurement under multilateral trade disciplines began after the Second World War. However, governments faced virtually no restraints in favouring national suppliers over foreign competitors until 1981, when the Tokyo Round Agreement on Government Procurement entered into force for a limited number of GATT contracting parties. Since then, progress was achieved in expanding the scope and coverage of the Tokyo Round Agreement when the Agreement on Government Procurement (GPA) entered into force in 1996 under the World Trade Organisation (WTO) auspices.

In parallel, several regional trade agreements, such as the European Union (EU) and the North America Free Trade Agreement (NAFTA), have brought government procurement under specific disciplines for their member countries. By committing governments to observe some basic principles, such as transparency and non-discrimination, the negotiated disciplines of these regional and multilateral agreements have sought to do away with some of the preferential and discriminatory practices in government procurement activities. Improved import competition conditions in government procurement play a crucial role in keeping downward cost pressures on goods and services purchases, giving taxpayers value for money, improving the quality of government services and permitting improved allocation of resources.

The primary objective of this report is to present a synthesis of the analytical studies on the quantification of the size of government procurement and markets. To provide some background information to readers about the relationships between international trade and government

procurement, two brief introductory sections are presented as reference to the main theme of the report. Section 2 presents a brief historical review of how the GATT and WTO multilateral disciplines in respect of government procurement have evolved. The consensus building and analytical role that the OECD played during this process is stressed. Section 3 offers a brief survey of the academic research on the impact of discriminatory procurement practices. Section 4 compares the methodological approaches and results drawn from publicly available studies and highlights the recent work carried out by the OECD Trade Committee. Various indicators of the size of government procurement markets are presented for both OECD and non-member countries, including ratios detailed by government levels and by types of expenditure (consumption *versus* investment) and indicators of the contestable shares of procurement markets that exclude either or both the compensation of government employees and defence-related expenditures. Section 5 offers some concluding remarks.

This document responds to the mandate of the OECD Trade Committee to deepen understanding of the important of the government procurement sector in international trade. This work supports the efforts of governments preparing for discussions on government procurement in the WTO. This document also aims at building better understanding and appreciation in the general public for the benefits that arise from improved multilateral disciplines in government procurement matters. This project has involved a collaboration effort from many representatives of national statistical offices in OECD member countries and the assistance of the OECD and United Nations Statistics Departments.

## 2. Evolving multilateral trade disciplines

During the negotiating process for the establishment of the International Trade Organisation (ITO) in 1946-47, proposals to subject government contracts to the fundamental trade principles of "Most-Favoured-Nations" (MFN) and "National Treatment" clashed with prevailing practices that favoured national suppliers. The ITO itself never came into being. Instead, the General Agreement on Tariffs and Trade (GATT) entered into force in 1948 with a specific exemption for government procurement from the application of the national treatment principle, under Article III, but incorporated an obligation of "fair and equitable treatment" for procurement by state trading enterprises, under Article XVII.2. Blank and Marceau (1997) qualify this procurement obligation on state trading enterprises as "very modest best-endeavour language".[1]

Until the Tokyo Round Agreement on Government Procurement (GATT Code) entered into force on 1 January 1981, governments faced virtually no

restraints when making purchases that favoured national suppliers over foreign competitors. The GATT Code extended the MFN and national treatment principles to the procurement of goods above a certain threshold by central government entities of the countries that specifically agreed to apply the code. It also laid down some operational provisions, including transparency requirement at each stage of the procurement process, multilateral dispute settlement procedures and special and differential treatment for developing countries. The national treatment means that the products of other parties to the code should not be subject to a treatment less favourable than for products of domestic origins. The MFN provision prohibits discriminatory treatment between products of other parties to the code.

The GATT Code was very much influenced by the analytical work and consensus-building efforts carried out by the OECD that started in 1963 and cumulated in 1976 with the OECD Draft Instrument on Government Purchasing Policies, Procedures and Practices. Following a request made by the GATT in November 1976 to the OECD, the Draft Instrument was transmitted to the GATT. It was sent with the disclaimer that "this draft is the result of work carried out at the level of experts, on an explanatory basis, and that it does not imply any commitment by governments on the proposed solution in general or on any of its particular aspects."[2]

The WTO Agreement on Government Procurement (GPA) that entered into force in 1996 expands the size of the global arena open to foreign competition. Whereas the GATT Code set forth rules for open and transparent bidding with regard to the purchase of goods by central government entities, the GPA expanded the disciplines to services and construction work and covers procuring entities at sub-central governments, as well as certain public and regulated private companies. A large part of the general rules and obligations concern tendering procedures that guarantee the transparency of the procedures and insure non-discrimination between domestic and foreign firms.[3] The GPA also contains the schedules of national entities in each participating member country whose procurement is subject to the agreement. The GPA is a "Plurilateral Agreement" in the WTO and, contrary to the main WTO agreements that bind all member countries, the GPA only applies to the country members that have specifically adopted it. In early 2001, there were some 27 WTO member countries participating in the GPA and several countries with observer status in the WTO Committee on Government Procurement.[4]

In the context of the 1996 WTO Ministerial Conference in Singapore, a Working Group on Transparency in Government Procurement Practices was set up. The group's work was to study transparency in government procurement practices, taking into account national policies and to develop elements for inclusion in a multilateral agreement. In the WTO, government

procurement is also discussed in the context of the GATS negotiations. Although the initial GATS Agreement contains an explicit exemption for the procurement by governmental agencies of services purchased for its own uses, it provides for multilateral negotiations on government procurement in services under the GATS within two years from the date of entry into force of the WTO Agreement. These negotiations are being pursued in the context of the overall GATS negotiations currently underway, under the so-called "Built-in Agenda", which also provides for a review of the GPA.[5]

## 3. Economic literature on the effects of procurement practice

This synthesis of academic research on the impact of government procurement on international specialisation and trade is presented as background information to the main theme of this document, which primarily focuses on the quantification of government procurement markets. As an introduction, the main forms of discriminatory or preferential procurement practices are summarised.

Discriminatory or preferential procurement practices can take several explicit forms, including "outright exclusion" in which foreign bidders are excluded from the tendering process (for example, defence contracts are often, but not always, reserved for domestic suppliers). Under "preferential price margin", purchasing entities accept the bids of domestic suppliers over foreign suppliers as long as the additional price is not above a specific margin of preference. A third type of discrimination is the use of a "domestic content requirement" in public purchasing in which the government purchases from foreign sources only if the latter commit to purchase some components from domestic firms. The above three forms of discriminatory practices are the most explicit and the most amenable for conceptualisation in modelling exercises.

The most insidious and pervasive forms of discriminatory practices relate to opaque tendering and bidding procedures, lacking in terms of transparency and non-discrimination provisions, which offer fertile ground for favouring domestic suppliers. Because of their implicit nature, the latter are the most difficult to conceptualise in modelling exercises. As a result, the economic costs and inefficiencies arising from non-transparent and discriminatory tendering and bidding procedures tend to be systematically underestimated.

Academic research on the impact of government procurement on international specialisation and trade flows started in the 1970s. Well-known work by Robert Baldwin (1970, 1984) and Baldwin and Richardson (1971) argued that discriminatory procurement policy affects neither domestic supply nor trade flows – the shift in government demand towards domestic products

leads to an equal but opposite shift in the private demand for imports. This somewhat counterintuitive result stood for some time as the main pillar of theoretical investigation. Nevertheless, Baldwin (1984) emphasised that his earlier results on the inconsequential impact of discriminatory practices may be attenuated under imperfect market conditions.

Several authors, including Lowinger (1976) and Deardorff and Stern (1979), have carried out empirical analysis of the trade impact of discriminatory procurement by comparing the actual import profile of government purchases with that of the private sector for the 1970s period. They supported the view that huge welfare gains would be derived from non-preferential procurement policies. Lowinger (1976) has estimated that imports by the US Government would increase by a factor of six or seven than their actual level in the mid-1960s. Deardorff and Stern (1979) argued that the welfare gains from the liberalising government procurement under the Tokyo Round would be greater than the gains from tariff liberalisation for industrial countries. These results did not validate the prevailing Baldwin's assumption that discriminatory procurement is inconsequential.

In Francois *et al.* (1996), the authors have assessed the impact of the Tokyo Round Agreement of Government Procurement on the procurement practices in the United States, based on data broken down by sectors and purchasing entities. They found that the US Government typically accounts for less that 5% of total domestic demand and argued that the potential impact of preferential practices on overall market access to be relatively limited. However, for certain key sectors, such as construction, maintenance and repair services, they argued that government preferences could and most likely affect market access.

Deltas and Evenett (1997) have examined the distribution effect of discriminatory procurement. They argued that preferential price policies in procurement bring in marginal welfare gains as the benefits from shifting profits to domestic firms are ultimately offset by increasing procurement costs. Mattoo (1997) has reviewed the main contributions of the economic literature on the impact of discriminatory procurement and argued that "*attempts to estimate the cost of procurement preferences without taking into account their effects on bidding behaviour may produce biased estimates.*" This serves as a useful reminder of the inherent difficulties of conceptualising some of the key aspects of procurement, such as the complexity of bidders' behaviour under conditions of imperfect competition and informational asymmetries between concerned parties.

This brief survey of academic research on the impact of government procurement on international specialisation and trade highlights the inherently complex task of conceptualising multiple and intertwined factors

into a theoretical modelling exercise, particularly in conceptualising implicit forms of discriminatory practices. Greater understanding of several related aspects, such as transparency and non-discriminatory provisions, bidders' behaviour, informational asymmetries, distribution effects and the dynamic effects of procurement preferences, could usefully provide additional policy underpinning and insights.

## 4. The size of government procurement markets

Table 1 shows the coverage and results of several studies on the quantification of the size of government procurement markets. It includes the recent work initiated by the OECD Trade Committee and other publicly available studies in the economic literature. The list may not exhaustive but it is illustrative of the relative scarcity of studies on this topic. The methodological approaches used and results obtained from these studies are reviewed below.

### 4.1. Data sources

One key consideration in quantifying government procurement markets relates to the selection of the source of data, which ultimately enables reliable

Table 1. **Various estimates of the size of government procurement markets**

| Various studies | | | | General government | | | Sub-central levels |
|---|---|---|---|---|---|---|---|
| | | | | Total expenditure % of GDP | Exclude non-tradable | | |
| Authors | Sources | Countries | Period | | Compensation of employees | Compensation of employees and defence | |
| *SNA-based* | | | | | | | |
| EC (1988) | SNA-OECD | EU-12 | 1987 | | | 11.7% | Yes |
| EC (1997) | SNA-OECD | EU-15 | 1994 | | | 11.2-11.8% | Yes |
| Francois *et al.* | SNA-OECD | USA | 92-93 | 18.3% | | | Yes |
| Trionfetti | SNA-UN | 9 OECD | 83-90 | | 7-9% | | |
| Trionfetti | IMF data | 8 OECD | 84-90 | | 10-18% | | |
| OECD | SNA-OECD | 28 OECD | 90-97 | 19.96% w.a. | 9.17% w.a. | 7.57% w.a. | Table A1 |
| OECD | SNA-OECD | 13 OECD | 90-97 | | 9.02% w.a. | 7.79% w.a. | Table A3 |
| OECD | SNA-UN | 106 non-OECD | 90-94 | 14.48% w.a. | 6.89% w.a. | 5.10% w.a. | Table A2 |
| *Bottom-up* | | | | | | | |
| Hoekman | WTO | 20 | 83-92 | 0.42% | | | |
| EC (2000) | *Official Journal* | EU-15 | 93-98 | | | 13.9-14.6% | |

*Note:* Weighted average percentages are noted by the indication w.a.
   In the EC studies, the ratios are measuring public procurement.
*Source:* EC (1997 and 2000), Francois *et al.* (1996), Trionfetti (2000) and Hoekman (1997).

country comparison. The logical choice falls on the System of National Accounts (SNA) that is universally applied in the compilation of national economic activities, albeit with considerable differences in the availability of detailed national data among countries. Given the long experience of countries in using the SNA, the risk of inconsistent application or misinterpretation of some of its statistical definitions is considered low. All studies reported in Table 1 have used or partly used one of the three SNA-based data sources, with the exception of the study by Hoekman (1997), which is based on WTO notifications, and the EC (2000) study, which is based on periodic surveys of notifications requirements in the EU Official Journal. The latter data sources are classified under the so-called "bottom-up" approach and are discussed in Section 4.4.

The three SNA-based data sources are: the Government Finance Statistics by the International Monetary Fund (IMF); the National Accounts Statistics: Main Aggregates and Detailed Tables, by the United Nations (UN); and the National Accounts: Detailed Tables, by the OECD. Statistics published by the OECD and the UN are perfectly compatible. In the Government Finance Statistics by the IMF, the recording of transactions is slightly different, which gives somewhat different results for similar accounting categories of expenditure.[6]

## 4.2. *The System of National Accounts*

The SNA contains statistical definitions on a wide-range of economic activities, including government activities. Annex 2 provides a glossary of the main terms used in this review. The SNA enables to calculate the size of government procurement markets on the basis of data series on government accounts. The most important series for the measurement of government current procurement are "Final Consumption Expenditure" (FCE) and "Intermediate Consumption" (IC). IC of governments refers to the current acquisitions of governments whereas FCE contains all net costs of service production by governments, that is including compensation of employees (CE), consumption of fixed capital (depreciation) and indirect taxes. Income of sales is also subtracted from FCE. Annex 3 provides more technical information about how the FCE and IC data series are reconciled.

To obtain a complete picture of total acquisition by governments, it is necessary to add the investment expenditure realised by governments to the current acquisitions. Government investment is defined as the "Gross Fixed Capital Formation" (GFCF). Total government acquisitions (hereby referred to as total expenditure less compensation) can thus be measured by adding GFCF to either IC or FCE (less CE) data series or both depending on the availability of national data.

Whereas the availability of detailed IC series by government levels is weak and uneven for OECD member countries and virtually non-existent for non-member countries, detailed FCE series are abundant for the overwhelming majority of OECD member countries. Data on FCE series and GFCF are available for most OECD member countries by sub-levels of government, for: i) central government; ii) state governments (if they exist); iii) local governments (for most countries state and local governments data are combined); and iv) Social Security funds. For purpose of clarity, the term "general government" encompasses all government levels and "sub-central governments" refers to government levels other than the central government, i.e. state and local governments and social security funds. For non-member countries, it is primarily the main aggregates of the national accounts at the general government level that are compiled and available in the UN publication. Detailed FCE series for sub-central governments are virtually non-existent and GFCF data are unevenly available for non-member countries.

The SNA also contains a statistical definition for public enterprises, which are defined as those organisations, that are entirely or mainly, owned and/or controlled by public authorities. Unfortunately, national data on public enterprises is not widely available for OECD member countries and virtually non-existent for non-member countries. More importantly, the presence of huge differences in the reported national data raises doubts about their reliability. It appears that due to uneven compilation practices among countries, national data on public enterprises are sometimes improperly classified under public non-financial corporations, which overstates public non-financial corporations data and understate public enterprises' procurement. This illustrates the key consideration of the consistency in the compilation procedures of national data among countries. Without harmonised compilation procedures among all countries, the basis for country comparison will be distorted.

The OECD-UN SNA data used in the studies reported in Table 1 are based on the 1968 version of the SNA (Series F. No. 2, Rev3). The 1968 version is now outdated and, since 1999, most OECD member countries have switched to the 1993 version of the SNA, as a basis for compiling their national accounts. The SNA 1993 was jointly prepared by the OECD, the EC, the IMF, the UN and the World Bank. For the first time, the OECD published in 2000 the national accounts data on the basis of the new SNA 1993, i.e. *National Accounts of OECD Countries, Detailed Tables, Volume II 1988-1998*. The switch over represents a large undertaking for national statistical agencies. At this juncture, some countries are producing very short time series on the new basis and the data compiled are less detailed than those previously available. Once these problems are solved, it would then be possible to use the SNA 1993 for measuring the size of government procurement markets in a consistent

manner for a large number of countries and for more recent periods. Since the SNA 1993 differs somewhat from the 1968 version, the methods applied in the estimation of government procurement will have to be modified accordingly.

## 4.3. SNA-based estimates of government procurement markets

### 4.3.1. Recent OECD work

With the set objective of quantifying the shares of government procurement markets in OECD and non-member countries that are potentially internationally contestable, various procurement ratios were measured. Tables 2 and 3 provide a synthesis of the average ratios calculated for the two groups of countries (the OECD member countries as a whole and the non-member countries as a whole), whereas Tables 5 and 6 provide the detailed ratios calculated for individual OECD member and non-member countries respectively. The initial OECD project intended to cover procurement by governments as well as public enterprises. Unfortunately, the project was scaled back to measuring government procurement markets only as the availability and reliability of national data on public enterprises did not permit reliable country comparison.[7]

The measurement of the 10 ratios of the size of government procurement markets, as shown in Table 5, has required data for 30 standardised SNA statistical items for each country (as detailed in Table 8). To deal with the problem of missing data in specific OECD member countries, the missing data were estimated and the methods and assumptions used for estimating them are explained in Annex 4.

Table 5 shows a total of 10 estimates of government procurement markets including six ratios that are designed to capture the tradable shares of government expenditure. The first four ratios measure the sum of government consumption and investment expenditure, i.e. Total Expenditure (TE), detailed by levels: general government; central government; local governments (state and local together); and Social Security fund. All ratios are expressed as a share of GDP of the country concerned. The next four ratios measure the respective total expenditure excluding the compensation of employees for each level of government. Finally, the last two ratios propose a measurement of the theoretical tradable procurement markets that exclude both defence-related expenditure and compensation of employees. These two categories of expenditure are assumed to be non-tradable. The latter ratios are measured respectively at the general and central government levels reflecting the exclusive responsibility of central governments in defence matters.

Each ratio shown in Table 5 is the average of the annual ratios calculated for the period starting in 1990 and up to 1997, depending on the availability of annual data by country. The advantage of averaging is that it takes into

account of the annual fluctuations over the period and therefore avoids the problem of picking up one single year, which may not be a representative year. One consequential disadvantage is that the ratio for the general government for anyone country shown in Table 5 does not added up to the sum of the reported ratios for the three levels of governments (central, local and Social Security fund).[8]

The bottom section of Table 5 also shows the average percentage for the OECD as a whole for each of the 10 ratios based on a simple average and a GDP-weighted average. The weighted average ratios take into account the relative size of each country and thus are better indicators of the average size of government procurement markets for the OECD as a whole. The weighted average ratios are all smaller than the ratios measured on a simple average basis.

Table 6 shows seven ratios covering government procurement at the general government level for 106 non-member countries. Disaggregated data for sub-central government levels was available for four countries only, *i.e.* Colombia, Ecuador, Peru and Venezuela, and was not considered as a sufficiently representative basis for extrapolating results on all non-member countries. Each ratio is the average of the annual ratios calculated for the period starting in 1990 and up to 1994, depending on the availability of annual data by country (the most recent period available in the UN publication). The average ratios calculated both on a simple average and a GDP-weighted basis for the group of non-member countries as a whole are shown in Tables 2 and 3.

The measurement of the seven ratios of the size of the general government procurement markets in non-member countries has required data for nine standardised SNA statistical items for each country, which are the same first nine standardised items used for OECD member countries (see Table 8). Gaps in the availability of data for non-member countries have somehow undermined the reliability and robustness of the estimates of certain ratios of procurement markets. Few estimates of the missing data for non-member countries were made.[9] More particularly, although the consumption segment of general government expenditure is available for 106 countries, the investment segment (gross fixed capital formation) is available for 29 countries only. Table 2 shows four ratios of the size of procurement markets for the consumption segment of general government expenditure and three ratios of total expenditure taking into account both consumption and investment expenditure.

The last two columns of Table 2 show respectively the number of non-member countries taken into account in the calculation of each ratio and, for each ratio, the GDP percentage of those countries relative to total GDP of all

Table 2. **Government procurement ratios in OECD member and non-member countries**

| General government | Weighted average | | Simple average | | Non-OECD | |
|---|---|---|---|---|---|---|
| | OECD (%) | Non-OECD (%) | OECD (%) | Non-OECD (%) | No. of countries | GDP covered (%) |
| ***Consumption expenditure*** | 17.09 | 14.12 | 19.04 | 16.96 | 106 | 89.5 |
| Less compensation | 6.31 | 4.82 | 7.13 | 5.35 | 30 | 41.1 |
| Less defence | 14.17 | 9.54 | 17.03 | 12.05 | 22 | 22.6 |
| Less compensation and defence | 4.73 | 2.09 | 6.03 | 3.50 | 13 | 14.6 |
| ***Total expenditure*** | 19.96 | 14.48 | 22.22 | 19.46 | 29 | 26.6 |
| Less compensation | 9.17 | 6.89 | 10.32 | 8.80 | 20 | 21.2 |
| Less compensation and defence | 7.57 | 5.10 | 9.25 | 6.92 | 10 | 10.8 |

*Source:* United Nations (1997) and OECD (1998).

non-member countries. This last percentage amounts to 89.5% for the ratio of consumption expenditure, falling to 10.8% for the ratio of total expenditure excluding defence-related expenditure and compensation of employees. These percentages are indicative of the robustness of the estimated ratios of the size of government procurement markets for non-member countries. As it can be seen the robustness diminishes as additional elements are built into the ratios.

Table 3 shows all the estimates of the size of government procurement markets calculated on a weighted average basis for the two groups of countries. The ratios are expressed as a percentage of the total GDP for the respective group of countries and also in billions of US dollars based on 1998 GDP data. The main results are:

● The ratios of total expenditure, at the general government level, are estimated at 19.96% or USD 4 733 billion for OECD member countries and 14.48% or USD 816 billion for non-member countries. This world total procurement estimate is roughly equivalent to 82.3% of the world merchandise and commercial services exports in 1998.

● About 35% of the OECD total expenditure is accounted for by central governments with the remaining 65% accounted for by local government and social security funds taken together. When the OECD total contestable expenditure is measured, the relative share of the central government is 23.1% and the share of the sub-central governments is 76.9%. These aggregate percentages for the OECD as a whole mask some important country variations in the relative shares of total expenditure between central and sub-central governments (see Section 4.3.4).

Table 3. **The value and ratios of government procurement markets**

| Government procurement | OECD | | Non-OECD | | World |
|---|---|---|---|---|---|
| | % GDP | Value | % GDP | Value | Value |
| GDP 1998 (USD billions) and (% of GDP w.a.) | | 23 716.3 | | 5 641.4 | 29 357.7 |
| *Consumption expenditure* | | | | | |
| General government | 17.09% | 4 053.1 | 14.12% | 796.6 | 4 849.7 |
| Less compensation | 6.31% | 1 496.5 | 4.82% | 271.9 | 1 768.4 |
| Less defence | 14.17% | 3 360.6 | 9.54% | 538.2 | 3 898.8 |
| Less compensation and defence | 4.73% | 1 121.8 | 2.09% | 117.9 | 1 239.7 |
| *Total expenditure (TE)* | | | | | |
| General government | 19.96% | 4 733.8 | 14.48% | 816.9 | 5 550.6 |
| Central government | 7.13% | 1 691.0 | | | |
| Local government | 12.12% | 2 874.4 | | | |
| Social security funds | 1.22% | 289.3 | | | |
| *TE less compensation* | | | | | |
| General government | 9.17% | 2 174.8 | 6.89% | 388.7 | 2 563.5 |
| Central government | 3.39% | 804.0 | | | |
| Local government | 5.44% | 1 290.2 | | | |
| Social security funds | 0.51% | 121.0 | | | |
| *TE less compensation and defence* | | | | | |
| General government | 7.57% | 1 795.3 | 5.10% | 287.7 | 2 083.0 |
| Central government | 1.75% | 415.0 | | | |

*Source:* United Nations (1997) and OECD (1998).

● The ratios of contestable total expenditure, at the general government level, (excluding defence-related expenditure and the compensation of employees) are estimated at 7.57% or USD 1 795 billion for OECD member countries and 5.10% or USD 287 billion for non-member countries.

● The world value of the contestable government procurement is estimated at USD 2 083 billion in 1998, which is equivalent to 7.1% of the world GDP or 30.1% of the world merchandise and commercial services exports in 1998. OECD member countries account for 86.1% of this world contestable procurement market, which is slightly above its relative share of the world GDP (80.2%).

Due to the use of a somehow restrictive assumption whereby all defence-related expenditure is treated as non-tradable, the above estimates of the contestable procurement ratios underestimate the actual competitive conditions in procurement since several OECD member countries have opened up their non-hardcore defence procurement under regional trade arrangements or unilaterally. This underestimation is further confirmed by

the similar quantitative work carried by the European Commission (EC) that has treated non-hardcore defence expenditure as tradable (see Section 4.3.2).

Comparison of the ratios obtained for OECD and non-member countries reveals some differences in terms of the size and the composition of expenditure between the two groups of countries. All ratios measured for OECD member countries as a whole are systematically higher than the equivalent ratios measured for the group of non-member countries. Concerning the composition of expenditure, defence-related consumption expenditure is on a relatively larger scale in non-member countries than in OECD member countries (4.58% *versus* 2.92%).[10] Similarly, the share of investment expenditure is higher in non-member countries than in OECD member countries, after defence-related expenditure and the compensation of employees are deducted (3.01% *versus* 2.84%).[11] These comparative shares in the composition of government expenditure should be interpreted with caution given the small sample of non-OECD member countries taken into account in these estimates.

The above OECD estimates present a number of distinctive characteristics for measuring in a consistent manner the shares of government procurement markets for a large number of countries. The country coverage is considerably wider and more detailed than any other studies on the quantification of government procurement markets, as reported in Table 1. In total, 14 different ratios of government procurement markets are measured for OECD member countries with detailed ratios by countries broken down by government levels and tradable shares. For non-member countries, 106 countries at the general government level are covered and seven detailed ratios are measured broken down between consumption *versus* investment expenditure and tradable ratios. The periods covered, 1990-97 for OECD member countries and 1990-94 for non-member countries, also represent the most recent periods for which consistent SNA-based data (1968 version) are available. Unlike any other studies, the ratios are measured for the two groups of countries as a whole on a GDP-weighted basis, thereby taking into account the relative size of the countries considered.

### 4.3.2. *The EC estimates of government procurement markets*

The EC published in 1988 and 1997 two comprehensive reports regarding public procurement in the context of the Single European Market program. The first report entitled *The Cost of non-Europe in Public Procurement* (EC 1988), assessed the potential savings in public expenditure within the EU-12 from removing all barriers to trade in public purchasing including procurement carried out by publicly or privately owned enterprises, *i.e.* water, energy, transport and telecommunications sectors. It also assessed the size of public procurement markets for the 12 member states in 1987, based on SNA data

and other sources. The second report, *The Single Market Review, Subseries III: Dismantling of Barriers, Volume 2: Public Procurement* (EC 1997), estimated the size of public procurement for the 15 member states in 1994 on the basis of SNA data complemented with demand-side survey results (bottom-up analysis).

In these EC studies, one ratio of public procurement is consistently measured as a basis of comparison among the EU member states. The public procurement in question is composed of two parts. The first refers to government procurement at the general government level, including both consumption and investment expenditure, excluding the compensation of employees and "warlike" materials (Article 223 of the EC Treaty which are not covered in EC Directives on procurement). The measurement of "warlike" materials by the EC is derived from SNA-based statistics and estimates of the share of "warlike" materials in the study, *The Cost of non-Europe in Defence Procurement* (EC 1994). The second part refers to public utilities' procurement, excluding the compensation of employees, and is measured on a combination of SNA data and demand-side survey results.[12]

Table 4 shows the estimated size of public procurement for individual EU member states calculated for 1987 and 1994, as reported in EC (1997). To ensure comparison between the 1987 and 1994 results, the market size

Table 4. **EU public procurement in 1987 and 1994**

| European Union | Public procurement (includes government and public services) | | Government procurement (government only) |
| --- | --- | --- | --- |
| | 1987 (%) | 1994 (%) | 1994 |
| Belgium/(Luxembourg 1994) | 12.7 | 5.8-7.2 | |
| Denmark | 11.6 | 11.0-11.1 | |
| France | 11.5 | 10.2-10.7 | |
| Germany | 9.9 | 13.0-13.5 | |
| Greece | 15.7 | 6.5-8.2 | |
| Ireland | 11.5 | 8.7-9.8 | |
| Italy | 10.4 | 8.6-9.6 | |
| Netherlands | 11.6 | 8.5-9.0 | |
| Portugal | 14.5 | 11.4-12.0 | |
| Spain | 10.4 | 9.4-9.9 | |
| United Kingdom | 16.5 | 14.4-14.5 | |
| EU-12 | 11.7 | 11.1-11.6 | |
| Austria | 11.7 | 11.6-12.0 | |
| Finland | 11.6 | 10.8-12.3 | |
| Sweden | 11.7 | 14.6-14.7 | |
| **EU-15** (ECU billions) | 476.1 | 704.1-737.6 | 547.4 |
| **EU-15** | 11.7% | 11.2-11.8% | 8.7% est. |

*Source:* EC (1997, Tables 4.1, 10.1 and 10.3).

statistics in the first report were adjusted to reflect the differences in coverage of public entities. EU public procurement is estimated at 11.7% in 1987 and at a range between 11.2% and 11.8% in 1994. Despite these adjustments, there are significant differences in the estimated ratios for 1987 and 1994. The 1994 ratios are lower than in 1987 for all EU-12 member states, except for Germany due to its unification. Among the explanatory factors for the decrease in the size of the public procurement, the report notes the general reduction in public expenditure as a result of policy to reduce budget deficits, the privatisation of public services and the contracting out of non-core services. Also noted in the report is the problem of relying on data for one year only due to annual variances in expenditure, particularly in the smaller countries, where large infrastructure projects can have a significant impact on government expenditure (EC 1997, pp. 110-112).

Based on a value of total EU government procurement of ECU 547.4 billion in 1994, the equivalent ratio of government procurement to GDP is estimated at 8.7%, as shown in the last column of Table 4. This estimated ratio of the size of the EU general government procurement market, excluding compensation of employees and warlike expenditure, is above the 8.03% EU weighted average ratio measured in the OECD work that excludes compensation of employees and all defence-related expenditure (see the last line of Table 5). These two ratios are nevertheless broadly consistent since the adjustment made in the OECD work for all defence expenditure is larger than the adjustment made in the EC studies for warlike materials. This comparison also highlights the restrictive assumption used in the OECD work, in which all defence expenditure is assumed as non-tradable. While the Commission has had access to break down data for hardcore and non-hardcore defence expenditure for its member states, such detailed data is available in neither the OECD-SNA publication nor the UN-SNA publication.

### 4.3.3. Other estimates of government procurement markets

In François *et al.* (1996), the authors have assessed the impact of the Tokyo Round Agreement of Government Procurement on the procurement practices in the United States. From SNA-based data for 1992-93, the average total expenditure of general government is estimated at about USD 1 100 billion, which is equivalent to an average of 18.3% of the US GDP for the period covered, and of which 40% is accounted for by the federal government. Trionfetti (2000) has estimated the size of government procurement markets on the basis of both the United Nations SNA and the International Monetary Fund data.[13] The most recent year covered is 1990 and ratios of procurement markets are measured for a small number of OECD member countries.

### 4.3.4. *Government procurement by sub-central governments*

Although the broken down data by government levels is generally compiled by OECD member countries and available in the OECD-SNA publication, it is only in the OECD work (Table 5) and EC (1997, Table 10.2) that the respective shares of government procurement are consistently measured for individual countries. In EC (1997), the shares of total public procurement for the EU-15 as a whole in 1994 is estimated at 28.8% for the central government, 47.1% for sub-central governments, and 24.1% for public utilities. In François *et al.* (1996), the authors evaluate the share of total expenditure of the US federal government at 40% of total expenditure – by deduction, the 18.3% share of total expenditure is divided in 7.3% and 11.0% for the central and sub-central governments respectively.

Table 5 shows government procurement ratios broken down by government levels for each OECD member country and illustrates a contrasting pattern of expenditure among them. For 19 OECD member countries, the structure of government procurement shows a lower ratio of total expenditure for the central government than for local government and Social Security fund taken together. Two countries (France and Italy) have almost equal ratios for central *versus* sub-central governments. Finally, nine countries have a centralised structure with higher ratios in central government than in sub-central governments. For the OECD as a whole, central government expenditure accounts for about 35% of total general government expenditure *versus* 65% for sub-central governments. When the ratios of total expenditure excluding the compensation of employees are compared, only five countries (Greece, Poland, Portugal, Turkey and the United Kingdom) still have a centralised structure of procurement.

The last two columns of Table 5 show two ratios of contestable total expenditure, excluding compensation of employees and defence-related expenditure, for the general government level and the central governments. In these cases, central government expenditure account for slightly less than a quarter (23.1%) of the total contestable general government expenditure *versus* 76.9% for the sub-central governments taken as a whole. These ratios of the contestable total expenditure reveal an even higher weight of sub-central governments in total contestable expenditure than in the ratios of total expenditure (in which the compensation of employees and defence-related expenditure are included), 76.9% *versus* 65%. These aggregated estimates for the OECD as a whole however mask some distinctive country variations.

Measuring procurement ratios broken down by government levels is helpful for appreciating the expanded reach of the WTO GPA Agreement to sub-central government entities. With an estimated 35% share of total government procurement accounted by the central government and 65% for

the sub-central governments, it is extrapolated that the reach of the WTO GPA is about three time larger than under the GATT Code.[14]

From the EC study (1997), the quarter share of total public procurement accounted by the public utilities' procurement (24.1%) may also be used as a proxy for estimating the expanded WTO GPA coverage to certain public and regulated private companies. On the basis of the above rough extrapolations, the value of procurement falling under the purview of the GPA would become four times larger than under the GATT Code, *i.e.* one-quarter for the central government, two-quarters for the sub-central government and one-quarter for the public utilities. To evaluate more precisely the reach of the GPA after 1996, more detailed data would be required, including data broken down by entities, by contracts below and above specific threshold for each type of entities, and data for the period after 1996. Once OECD member and non-member countries will compile sufficiently detailed national data on the basis of the SNA 1993, estimating the reach of the GPA will be able on a more reliable basis.

## 4.4. *The "bottom-up" approach*

The so-called "bottom-up" approach refers to the process of gathering national data on procurement expenditure directly from national entities responsible for procurement decisions. The reliability of bottom-up approaches stem, to a large extent, from the homogeneity and consistency of the compilation and reporting processes throughout the countries subject to the notification requirements. Underreporting from one large country or several countries can seriously distort the quality of the overall database and, as a result, mislead any assessment drawn from it. Nevertheless, the information and data obtained on the basis of bottom-up approaches can be very useful for analysing the reach of some agreements and for making country comparisons. Two distinct notification requirements of procurement practices are discussed below.

### 4.4.1. *WTO GPA notification requirement*

The participating countries in the GPA Agreement, under Article XIX.5, are required to collect and to submit on an annual basis various statistics on their procurements covered by the GPA, including the estimated value of contracts awarded, both above and below specified threshold values broken down by entities. While the GPA entered recently into force in 1996 and there is a normal time lag before annual data can be accurately compiled, no comprehensive assessment of the notified GPA data have yet been published. This would be useful for appreciating the reach of the expanded coverage of the GPA over the Tokyo Round Agreement on Government Procurement (GATT

Code), *i.e.* sub-central entities and certain public and regulated private companies were added.

Based on the notification requirements of the GATT Code, Hoekman (1997) has analysed the notified data reported by 20 countries for the period 1983-1992. Mindful that the GATT Code only covered the procurement of goods by central governments, he estimated the total purchases to amount USD 62 billion in 1992 and to represent a ratio of 0.42% of the GDP for the countries concerned. This 0.42% ratio, based on the bottom-up approach, is suspiciously low in regard to the SNA-based procurement ratios shown in Table 1. The author also calculated that the share of contracts above thresholds subject to the GATT Code increased from an average of 38.8% to 49.5% of total contracts between the period 1983-85 and 1990-92. This is partially attributable to the 13% reduction in the threshold value that occurred in 1988 for contracts excluded from its application (falling from SDR 150 000 to 130 000).

### 4.4.2. *Notice requirements under EC Directives*

Public procurement within the EU is governed by the EC Government Procurement Framework, which is based on six substantive Directives.[15] Among other things, the Directives require EU procurement entities to publish in the EC Official Journal (OJ) tender notices and a Contract Award Notice (CAN) for each contract awarded. In the EC (1997) study, several types of information about public procurement were gathered through surveys of the Tenders Electronic Daily (TED) and of notices published in the OJ. Useful information was obtained through periodic surveys of published notices, which otherwise would not be obtained from SNA-based data.[16]

More recently, the Commission has developed a number of preliminary indicators to measure markets trends and the impact of public procurement policy based on information gathered from notifications in the Official Journal [EC(2000) study]. These indicators provide annual estimates of total public procurement, the value of calls for tenders and the number of calls for competition advertised in the Official Journal, and the number of entities publishing in the Official Journal. These annual values are available on the Internet for the period 1993-1998.[17] In particular, the estimated ratio of EU total public procurement to GDP declines slightly during this period from 14.6% to 13.9%. These ratios are considerably above the earlier estimates of EU total public procurement of 11.2% – 11.8% (Table 4), which is mainly due to a series of small changes in the expenditure accounted for public enterprises. One of these changes refers to fuel purchased by power generators, which was not taken into account in the EC (1997) study but added in the EC (2000) study.

The latest EC indicators of public procurement illustrate the careful attention that needs to be paid to the definitions used for measuring public

procurement. These results show the relative importance of procurement by public utilities and the potentially huge opportunities that they represent for international trade. They also illustrate the usefulness of bottom-up approaches based on periodic surveys of published information and data in the Official Journal, data that are not otherwise available from SNA-based studies.

## 5. Conclusions

Governments are significant purchasers of goods and services and these markets represent huge opportunities for international trade. Informed knowledge about the size of these huge markets and in particular their internationally contestable shares is relevant for the business community, governments and trade negotiators. There are few studies on the quantification of government procurement markets but their limited country coverage and uneven treatment of procurement at sub-central government levels leave interested parties with an overall incomplete and segmented analytical picture. The absence of detailed and consistent measurements of contestable shares of government procurement markets for a large number of countries represented an information gap that has needed to be addressed. This document presents a synthesis of the analytical studies on the quantification of the size of government procurement markets and highlights recent work carried out by the OECD Trade Committee that covers over 130 countries.

Based on the SNA 1968, the recent OECD work presents a number of distinctive characteristics for measuring in a consistent manner the shares of government procurement markets for a large number of countries. The country coverage is considerably wider and more detailed than any other studies. In total, 14 different ratios of government procurement markets are estimated for OECD member countries with detailed ratios by countries broken down by government levels and contestable shares. For non-OECD countries, 106 countries at the general government level are estimated and seven detailed ratios are measured broken down between consumption *versus* investment expenditure and contestable ratios. The country specific estimated procurement ratios are detailed in Table 5 for 28 OECD countries and Table 6 for 106 non-member countries.

The contestable shares of total government procurement were measured by adding the consumption and investment components of government acquisitions and subtracting the compensation of employees and all defence-related expenditure which are assumed to be non-tradable expenditure. On the basis of 1968 SNA data, the contestable shares of government procurement are estimated at 7.57% for OECD member countries and 5.10% for non-member countries. The world value of the contestable government procurement market is estimated at USD 2 083 billion in 1998, which is

equivalent to 7.1% of the world GDP or 30.9% of the world merchandise and commercial services exports in 1998. OECD member countries account for 86.1% of this world contestable procurement market, which is slightly above its world GDP weight (80.2%). The estimate for the world total government procurement market is USD 5 550 billion, which is roughly equivalent to 82.3% of the world merchandise and commercial services exports in 1998.

The EC has carried out a number of studies on the quantification of procurement markets and estimated the contestable procurement for the EU at 8.7% of its GDP. Based on OECD work, a lower estimate of the EU contestable market was estimated at 8.03% which is mainly explained by the use of different assumptions and data regarding defence-related expenditure. The EC has had access to detailed defence-related data for its member states that distinguished between hardcore and non-hardcore defence expenditure. In the EC study, hardcore defence expenditure was considered as non-tradable whereas the OECD study has considered all defence-related expenditure as non-tradable. These results suggest that the OECD procurement estimates slightly underestimate the size of procurement markets that are potentially opened up to international competition.

Central governments are estimated to account for 35% of total government procurement within the OECD taken as a whole, with the remaining 65% accounted for by local government and Social Security funds taken together. The central government share of the total contestable general government is slightly less than a quarter (23.1%), with the remaining share accounted for by the sub-central governments taken as a whole (76.9%). These aggregated percentages for the OECD as a whole mask some important country variations in the relative shares of total procurement between central and sub-central governments.

The so-called "bottom-up" approach refers to the process of gathering national data on procurement expenditure directly from national entities responsible for procurement decisions. The participating countries in the WTO Government Procurement Agreement (GPA) are required to submit on an annual basis various statistics on their procurement covered under the GPA. Under EU Procurement Directives, procurement entities are subject to various notification requirements in the EU Official Journal. The reliability of results obtained from bottom-up approaches stem, to a large extent, from the homogeneity and consistency of the compilation and reporting processes throughout the countries subject to the notification requirements. Establishing such processes require considerable resources at least in the initial stage. The information and data obtained on the basis of surveys of notification requirements usefully complements SNA-based data and is also useful for analysing the reach of some agreements and for making country comparisons.

Measuring procurement ratios broken down by government levels is helpful for appreciating the expanded reach of the WTO GPA Agreement to sub-central government entities since 1996. Based on OECD work, the shares of total government procurement accounted by the central government and the sub-central governments are 35% and 65% respectively. It is thus extrapolated that the reach of the WTO GPA, due to its expanded coverage to sub-central entities, is about three times larger than under the GATT Code. By extrapolating the estimated shares of total public procurement accounted by public utilities (EC work), the reach of the GPA gains an additional quarter – overall four times larger than under the GATT Code.

The SNA 1968 version is now outdated and, since 1999, most OECD member countries have switched to the 1993 version of the SNA, as a basis for compiling their national accounts. At this juncture, some OECD member countries are producing very short time series on the new basis and the data compiled are less detailed than those previously available. No data have yet been published for non-member countries on the basis of the SNA 1993. Once these problems are solved, it would then be possible to use the SNA 1993 to measure the size of government procurement markets in a consistent manner for a large number of countries and for more recent periods. Hopefully, the availability of national data for public utilities will improve and enable to measure public procurement encompassing both government and public utilities' procurement.

## Notes

1. See Blank and Marceau (1997, p. 31). For a detailed description of the origins and evolution of the GATT/WTO disciplines in government procurement, readers should refer to the detailed article prepared by Mrs. Blank and Marceau "A History of Multilateral Negotiations on Procurement: From ITO to WTO."

2. The OECD Draft Instrument was not adopted as a formal OECD instrument and it contained a series of bracketed provisions as alternative formulations. It was forwarded to the GATT in December 1976.

3. The GPA also reinforces rules guaranteeing fair and non-discriminatory conditions of international competition. Participating governments are required to put in place domestic procedures by which aggrieved private bidders can challenge procurement decisions and obtain redress in the event such decisions were made inconsistently with the rules of the agreement. The GPA applies to contracts worth more than specified threshold values. For central government purchases of goods and services, the threshold is SDR 130 000 (some USD 178 100). For purchases of goods and services by sub-central government entities the threshold varies by country but is generally in the region of SDR 200 000. For utilities, thresholds for goods and services are generally in the area of SDR 400 000 and for construction contracts, in general the threshold value is SDR 5 000 000. The country specific thresholds are available on the WTO website *www.wto.org*.

4. The WTO member countries that are parties to the GPA are: Canada, the 15 member states of the European Union and the European Commission, Hong Kong China, Iceland, Israel, Japan, Korea, Liechtenstein, the Kingdom of Netherlands with respect to Aruba, Norway, Singapore, Switzerland, and the United States. The countries that have observer status are: Argentina, Australia, Bulgaria, Cameroon, Croatia, Chile, Colombia, Czech Republic, Estonia, Georgia, Jordan, the Kyrgyz Republic, Latvia, Lithuania, Malta, Moldova, Mongolia, Oman, Panama, Poland, Slovak Republic, Slovenia, Chinese Taipei and Turkey.

5. The WTO website *www.wto.org* provides materials in the three areas of work in the WTO on government procurement: *i)* Transparency: the Working Group on Transparency in Government Procurement; *ii)* Services: The Working Party on GATS Rules; and *iii)* the Plurilateral Agreement on Government Procurement.

6. There are numerous small differences between the SNA and Government Finance Statistics (GFS). For instance, the purchases of uniforms for the military are classified under purchases of goods and services in the GFS but under wages and salaries in kind in the SNA. There is also a major difference: the SNA subtracts from each purchase some of the fees and taxes collected by the government in connection to government contracts or to the purchase of goods used to offer a public service. Neither method is univocally better than the other for the purpose of measuring the size of government procurement markets. For instance, taxes and fees paid by firms in relation to government contracts should not be considered as part of the market size; here the SNA is better. However, the small fees paid in order to receive lunches for kids in primary schools should not be subtracted from the total purchases of food for that purpose; here the GFS system is better. This myriad of differences is such that it is not possible to establish which system is better for the purpose of measuring the size of the public procurement.

7. It took more or less 18 months of collaboration efforts between the Secretariat and national statistical departments for achieving sufficient confidence in the database and to compile this project.

8. The review of the trends in the annual ratios shows that annual fluctuations are rather small and the ratios are following a negative trend in 18 countries and a positive trend in 10 OECD member countries. The standard deviation was indeed measured for each single ratio calculated but it is not reproduced in the text.

9. The measurements of the size of government procurement markets for non-member countries have been made from data actually available and a limited number of estimates of missing data. Those estimates solely concern defence-related segment of the compensation of employees. They were made for 11 of the 13 countries for which it is stated in Table 4 that these data are available. For each country, the share of defence-related compensation of employees corresponds to the observed proportion of defence-related final consumption expenditure in final consumption expenditure relative to total expenditure on compensation of employees [$CEdef = (FCEdef/FCE)(CE)$]. These minor adjustments have served to increase significantly the number of countries for which it is possible to calculate the ratios of the size of procurement markets, excluding defence-related expenditure and the compensation of employees. Concerning the FCE, FCE data for OECD member countries was calculated on a net basis of consumption of fixed capital, indirect taxes and sales. For non-member countries, data on CFC, indirect taxes and sales were available for

only 14, seven and one countries respectively. No adjustments were made for the missing data.

10. The share of defence-related consumption expenditure for non-member countries is obtained by subtracting the ratio of defence-related expenditure from the ratio of consumption expenditure falls from (14.12% – 9.54% = 4.58%). For member countries, the defence-related share of consumption expenditure is equivalent to 2.92% of GDP (17.09% –14.17% = 2.92%).

11. The investment share of general government for non-member countries is obtained by subtracting from the ratio of total expenditure, excluding defence-related expenditures and the compensation of employees (5.10%), the ratio of consumption expenditure less compensation of employees and defence-related expenditure (2.09%), i.e. 5.10% – 2.09% = 3.01%). In the same way, the investment share of general government for member countries is 7.57% – 4.73% = 2.84%.

12. The EC estimates of public procurement shown in Table 4 and the OECD estimates of the EU-15 ratios, shown in bottom part of Table 5, are not strictly comparable. The EC estimates cover public utilities procurement, which is not covered in the OECD estimates and only warlike materials are excluded in the EC estimates whereas all defence-related expenditure is excluded in the OECD estimates. Another distinction between the two studies relates to the source of data. The OECD estimates are solely based on SNA data whereas the EC studies are based on a combination of SNA-based data and data obtained on the basis of surveys.

13. Government procurement in these estimates refers the final consumption expenditure, plus gross fixed capital formation, less compensation of employees. No further details are available to evaluate whether the final consumption expenditure was adjusted for consumption of fixed capital, sales and indirect taxes.

14. This extrapolation is based on a rough rule-of-thumb. It should be kept in mind that the estimated ratios shown in Table 5 present averages of annual data for the period 1990 to 1997. It is possible that the relative weights of total expenditure between the central government and the sub-central government may have occurred for the period before and after 1996.

15. The six substantive Directives are: The Public Supplies Directive (93/36/EEC); the Public Works Directive (93/37/EEC); the Public Services Directive (92/50/EEC); the Public Remedies Directive (89/665/EEC); the Utilities Directive (93/38/EEC); and the Remedies Utilities Directive (92/13/EEC). In May 2000, the European Commission adopted a package of amendments to simplify and modernise the public procurement Directives. The new legal framework proposes, *inter alia*, to consolidate three existing Directives into one more coherent text, to relax some of the award procedures that are considered too inflexible to achieve the objective of best value for money and to encourage public authorities to make greater use of electronic means. It also provides for the exclusion of former regulated sectors, *i.e.* telecommunications, electricity and water, from the scope of the Directives as these sectors are effectively being liberalised and opened up to real competition. The European Commission recommends that member states implement the new legal framework by 2002.

16. For example, Tables 12.6, 12.8 and 12.10 in EC (1997) show the most used tendering procedures in 1994 by entities or Table 11.4 shows a comparison of contract award notices to total tenders published by Member States.

17. EC (2000), "Measuring the Impact of Public Procurement Policy, First Indicators", *Single Market News*, March. See *www.europa.eu.int/comm/internal_markets/en/smn/smn20/s20mn18.htm*

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*Annex I*

# TABLES

Table 5.    **Government procurement in OECD member countries, by government levels**

| OECD | Total expenditure (consumption and investment) | | | | | | | | | |
| | Total expenditure | | | | TE less compensation | | | | TE less compensation and defence | |
| | General | Central | Local | Social | General | Central | Local | Social | General | Central |
|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 25.83 | 4.60 | 22.32 | 0.04 | 11.47 | 1.69 | 8.80 | 0.02 | 10.40 | 0.62 |
| United States | 19.49 | 6.94 | 12.57 | | 8.80 | 3.71 | 5.11 | | 6.18 | 1.09 |
| Australia | 20.02 | 5.72 | 14.78 | | 8.85 | 2.07 | 5.81 | | 7.64 | 0.86 |
| Japan | 16.77 | 3.53 | 12.99 | 0.22 | 9.35 | 1.85 | 7.59 | 0.08 | 8.98 | 1.29 |
| Korea | 16.24 | 6.84 | 8.97 | 0.20 | 9.13 | 3.94 | 5.10 | 0.09 | 7.20 | 1.94 |
| New Zealand | 18.13 | 13.52 | 4.79 | | 7.28 | 3.66 | 3.80 | | 6.67 | 3.05 |
| Austria | 24.68 | 7.67 | 12.63 | 4.38 | 12.16 | 2.75 | 5.70 | 3.70 | 11.71 | 2.31 |
| Belgium | 17.23 | 10.09 | 5.63 | 0.86 | 5.37 | 2.48 | 1.95 | 0.30 | 4.84 | 1.95 |
| Czech Republic | 24.94 | 9.30 | 8.40 | 5.28 | 17.03 | 4.45 | 6.53 | 5.18 | 15.74 | 2.71 |
| Denmark | 28.29 | 8.71 | 19.30 | 0.29 | 10.63 | 3.34 | 7.20 | 0.09 | 10.04 | 2.75 |
| Finland | 25.63 | 8.58 | 18.77 | 1.53 | 9.64 | 4.22 | 7.44 | 1.22 | 9.00 | 3.58 |
| France | 23.10 | 11.03 | 7.33 | 4.74 | 9.05 | 3.24 | 4.22 | 1.60 | 7.63 | 1.81 |
| Germany | 17.81 | 2.94 | 13.77 | 1.10 | 7.32 | 1.52 | 5.39 | 0.40 | 6.72 | 0.81 |
| Greece | 18.64 | 12.98 | 1.61 | 3.22 | 7.29 | 4.32 | 0.84 | 1.30 | 6.73 | 3.76 |
| Hungary | 29.77 | 13.47 | 13.76 | 2.22 | 18.31 | 8.56 | 7.38 | 2.05 | 16.78 | 7.03 |
| Iceland | 25.80 | 14.02 | 8.17 | 2.67 | 12.92 | 4.81 | 5.07 | 2.11 | 11.76 | 3.62 |
| Ireland | 20.81 | 8.73 | 11.70 | 0.28 | 10.08 | 2.73 | 7.11 | 0.12 | 9.93 | 2.59 |
| Italy | 20.03 | 9.99 | 9.69 | 0.70 | 7.99 | 2.72 | 4.90 | 0.43 | 7.38 | 2.12 |
| Netherlands | 18.74 | 7.67 | 10.16 | 0.91 | 8.96 | 3.68 | 4.90 | 0.37 | 7.98 | 2.71 |
| Norway | 25.44 | 9.61 | 16.05 | | 11.44 | 5.61 | 6.06 | | 9.65 | 3.82 |
| Poland | 22.57 | 14.40 | 7.41 | | 10.69 | 6.55 | 4.31 | | 9.72 | 5.57 |
| Portugal | 20.98 | 16.42 | 4.41 | 0.46 | 7.24 | 4.83 | 2.59 | 0.13 | 6.22 | 3.80 |
| Slovak Republic | 25.08 | 18.09 | 3.70 | 3.30 | 15.34 | 9.46 | 2.79 | 2.98 | 14.09 | 8.21 |
| Spain | 20.51 | 7.11 | 8.88 | 4.49 | 8.74 | 2.63 | 4.44 | 1.64 | 8.06 | 1.95 |
| Sweden | 33.15 | 10.66 | 23.14 | 0.04 | 14.60 | 6.25 | 9.00 | 0.04 | 13.01 | 4.67 |
| Switzerland | 19.58 | 3.43 | 15.68 | 0.30 | 8.60 | 2.08 | 6.24 | 0.12 | 8.02 | 1.50 |
| Turkey | 17.72 | 14.83 | 2.13 | | 7.47 | 5.58 | 1.13 | | 6.84 | 4.96 |
| United Kingdom | 25.17 | 14.57 | 9.71 | 0.20 | 13.08 | 9.00 | 3.29 | 0.10 | 9.97 | 5.88 |
| **OECD simple av.** | 22.22 | 9.84 | 11.02 | 1.70 | 10.32 | 4.20 | 5.17 | 1.09 | 9.25 | 3.11 |
| **OECD weighted av.** | 19.96 | 7.13 | 12.12 | 1.22 | 9.17 | 3.39 | 5.44 | 0.51 | 7.57 | 1.75 |
| **EU weighted av.** | 21.48 | 8.87 | 10.79 | 1.79 | 9.24 | 3.76 | 4.67 | 0.72 | 8.03 | 2.53 |

*Source:*  These ratios were calculated on the basis of actual data submitted to the Secretariat by OECD member countries and estimations for missing national data. The methods and assumptions used for estimating the missing data are explained in Annex 4.

Table 6.  **Government procurement ratios in non-member countries, by region**

Percentage of GDP and USD billions

| Region | Consumption expenditure (%) | | | | Total expenditure (TE) (%) | | | GDP 1998 (USD billions) |
|---|---|---|---|---|---|---|---|---|
| General government | FCE | Excl. comp. | Excl. def. | Excl. comp. and def | TE | Excl. comp. | Excl. comp. and def. | |
| *Africa* | | | | | | | | |
| Benin | 12.59 | | | | | | | 2.32 |
| Botswana | 27.10 | | | | | | | 4.98 |
| Burundi | 17.36 | | | | | | | 0.98 |
| Cameroon | 10.22 | | | | | | | 8.70 |
| Ivory Coast | 16.76 | 4.32 | | | 20.39 | 7.96 | | 11.10 |
| Egypt | 9.45 | | | | | | | 82.71 |
| Ghana | 11.88 | | | | | | | 7.17 |
| Kenya | 16.27 | 3.16 | 14.43 | 2.75 | 19.17 | 6.06 | 5.66 | 10.37 |
| Lesotho | 17.06 | | | | | | | 0.37 |
| Madagascar | 8.25 | | | | | | | 3.75 |
| Malawi | 15.31 | | | | | | | 1.69 |
| Mali | 14.91 | | | | | | | 2.65 |
| Mauritius | 11.73 | 3.23 | 11.37 | 3.07 | | | | 4.20 |
| Morocco | 16.59 | | | | | | | 36.12 |
| Mozambique | 20.18 | | | | | | | 3.82 |
| Namibia | 29.33 | 9.89 | | | 35.78 | 16.34 | | 3.00 |
| Niger | 17.24 | | | | | | | 2.01 |
| Nigeria | 3.89 | 1.23 | | | | | | 36.14 |
| Reunion | 27.35 | | | | | | | 7.25 |
| Rwanda | 21.28 | | | | | | | 2.04 |
| Senegal | 13.26 | | | | | | | 4.86 |
| Seychelles | 28.75 | | 24.98 | | | | | 0.56 |
| Sierra Leone | 7.56 | | | | | | | 0.65 |
| South Africa | 19.74 | | | | 21.77 | | | 116.73 |
| Swaziland | 20.80 | | | | | | | 1.18 |
| Uganda | 9.10 | | | | | | | 6.06 |
| Tanzania | 8.29 | | 6.74 | | | | | 8.09 |
| Tunisia | 16.29 | 3.55 | | | 21.60 | 8.86 | | 20.02 |
| Zambia | 19.33 | | | | | | | 3.35 |
| *America* | | | | | | | | |
| Anguilla | 13.83 | | | | | | | 0.09 |
| Bahamas | 14.06 | 3.42 | 13.47 | 3.27 | 14.62 | 3.98 | 3.83 | 4.12 |
| Barbados | 19.75 | | | | | | | 2.33 |
| Belize | 19.47 | | 18.24 | | | | | 0.67 |
| Bermuda | 12.70 | | 12.48 | | | | | 2.31 |
| Bolivia | 12.45 | 1.84 | | | | | | 7.96 |
| Brazil | 16.46 | 7.21 | | | | | | 776.94 |
| Cayman Islands | 14.67 | | | | | | | 0.93 |
| Chile | 9.54 | | | | 11.51 | | | 74.32 |

Table 6.  **Government procurement ratios in non-member countries,
by region** (cont.)

Percentage of GDP and USD billions

| Region | Consumption expenditure (%) | | | | Total expenditure (TE) (%) | | | GDP 1998 (USD billions) |
|---|---|---|---|---|---|---|---|---|
| General government | FCE | Excl. comp. | Excl. def. | Excl. comp. and def | TE | Excl. comp. | Excl. comp. and def. | |
| Colombia | 10.27 | 1.55 | 9.06 | 1.02 | 13.48 | 4.75 | 4.19 | 90.41 |
| Costa Rica | 16.75 | | | | 18.36 | | | 10.42 |
| Dominica | 20.16 | | | | | | | 0.25 |
| Dominican Rep. | 4.23 | | | | | | | 16.04 |
| Ecuador | 9.33 | 4.21 | 8.05 | 3.63 | 13.23 | 8.11 | 7.53 | 19.30 |
| El Salvador | 9.74 | | | | 11.14 | | | 11.86 |
| French Guyana | 34.54 | | | | 48.75 | | | 1.50 |
| Grenada | 19.73 | | | | | | | 0.31 |
| Guadeloupe | 30.35 | | | | 39.25 | | | 3.50 |
| Guatemala | 6.34 | | | | 8.37 | | | 19.01 |
| Guyana | 13.04 | | | | | | | 0.74 |
| Honduras | 11.12 | | | | | | | 5.34 |
| Jamaica | 7.56 | | | | | | | 7.06 |
| Martinique | 28.75 | | | | 36.19 | | | 4.38 |
| Panama | 16.37 | 3.72 | | | | | | 9.82 |
| Paraguay | 19.33 | | | | | | | 10.93 |
| Peru | 7.94 | | | | 9.87 | | | 64.06 |
| Puerto Rico | 14.12 | | | | | | | 50.51 |
| Suriname | 26.27 | | | | | | | 0.82 |
| Trinidad-Tobago | 16.44 | 2.59 | | | | | | 6.14 |
| Uruguay | 13.70 | | | | | | | 20.95 |
| Venezuela | 8.60 | 2.31 | | | 10.28 | 4.00 | | 95.02 |
| *Asia* | | | | | | | | |
| Azerbaijan | 19.86 | 4.24 | 11.73 | 2.11 | | | | 4.10 |
| Bahrain | 26.07 | | | | | | | 5.35 |
| Bangladesh | 13.95 | | 12.53 | | | | | 41.42 |
| Bhutan | 21.58 | | | | | | | 0.36 |
| China | 12.84 | | | | | | | 960.79 |
| Cyprus | 17.81 | | 13.49 | | | | | 8.88 |
| Fiji | 17.44 | | | | | | | 2.33 |
| Hong Kong, China | 8.69 | 2.49 | | | 11.00 | 4.81 | | 166.45 |
| India | 10.54 | 3.44 | 7.42 | 1.74 | 13.29 | 6.18 | 4.46 | 420.31 |
| Indonesia | 9.20 | | | | | | | 215.00 |
| Iran | 11.06 | 2.63 | 8.00 | 1.90 | | | | 187.42 |
| Iraq | 30.82 | | | | | | | 4.60 |
| Israel | 25.95 | 10.01 | | | | | | 91.32 |
| Jordan | 23.74 | | | | | | | 7.45 |
| Kuwait | 37.30 | | | | | | | 26.45 |
| Kyrgyzstan | 20.04 | 11.74 | | | 21.60 | 12.88 | | 1.87 |
| Malaysia | 13.75 | | 10.76 | | | | | 67.48 |

Table 6. **Government procurement ratios in non-member countries, by region** (cont.)

Percentage of GDP and USD billions

| Region | Consumption expenditure (%) | | | | Total expenditure (TE) (%) | | | GDP 1998 (USD billions) |
|---|---|---|---|---|---|---|---|---|
| General government | FCE | Excl. comp. | Excl. def. | Excl. comp. and def | TE | Excl. comp. | Excl. comp. and def. | |
| Maldives | 21.97 | | | | | | | 0.40 |
| Nepal | 8.72 | | | | | | | 4.48 |
| New Caledonia | 33.02 | | | | | | | 3.56 |
| Oman | 27.34 | | | | | | | 14.96 |
| Pakistan | 12.87 | 6.61 | | | 16.29 | 10.03 | | 64.13 |
| Papua New Guinea | 23.24 | | | | | | | 3.71 |
| Philippines | 9.85 | 2.94 | | | 14.29 | 7.38 | | 82.24 |
| Qatar | 34.44 | | | | | | | 11.70 |
| Saudi Arabia | 33.86 | | | | | | | 125.84 |
| Singapore | 9.35 | | | | | | | 84.38 |
| Sri Lanka | 13.17 | 5.57 | 10.03 | 4.24 | 17.42 | 9.82 | 8.48 | 15.70 |
| Syrian Arab Rep. | 14.34 | | | | | | | 64.93 |
| Thailand | 9.67 | 3.08 | | | 17.31 | 10.72 | | 117.04 |
| United Arab Emirates | 17.01 | | | | | | | 47.23 |
| Uzbekistan | 22.71 | | | | | | | 14.19 |
| Vanuatu | 28.24 | 16.86 | | | | | | 0.25 |
| Vietnam | 15.93 | | | | | | | 24.60 |
| Yemen | 27.42 | | | | | | | 5.33 |
| *Europe* | | | | | | | | |
| Albania | 10.20 | | | | | | | 3.03 |
| Belarus | 19.15 | 10.54 | 10.54 | 5.62 | 21.27 | 12.65 | 7.74% | 14.28 |
| Bulgaria | 8.08 | | | | | | | 12.06 |
| Estonia | 16.62 | 8.06 | 15.96 | 7.75 | 21.05 | 12.50 | 12.18% | 5.11 |
| Latvia | 14.70 | 7.79 | | | 17.09 | 10.18 | | 6.19 |
| Lithuania | 15.68 | | | | | | | 10.69 |
| Malta | 17.56 | 4.24 | 15.20 | 3.67 | 21.87 | 8.55 | 7.99% | 3.99 |
| Romania | 13.77 | | 8.49 | | | | | 41.70 |
| Russia | 17.39 | | 12.70 | | | | | 283.82 |
| Slovenia | 19.62 | | | | | | | 19.99 |
| Ukraine | 15.77 | 7.95 | 9.33 | 4.72 | 18.15 | 10.33 | 7.10% | 42.70 |

Table 7. **Government procurement markets under the intermediate consumption approach**

Percentage of GDP

| OECD | Intermediate consumption | | | | | |
|---|---|---|---|---|---|---|
| | Excluding compensation of employees | | | | Excluding compensation and defence | |
| | General | Central | Local | Social | General | Central |
| Austria | 12.16 | 2.75 | 5.70 | 3.70 | 11.71 | 2.31 |
| Belgium | 4.40 | 2.56 | 1.57 | 0.27 | 3.87 | 2.03 |
| Czech Republic | 12.41 | | | | 11.21 | |
| Denmark | 10.63 | | | | 10.04 | |
| France | 9.05 | 3.24 | 4.22 | 1.60 | 7.63 | 1.81 |
| Germany | 7.33 | 1.52 | 5.40 | 0.40 | 6.62 | 0.81 |
| Italy | 7.72 | 2.54 | 4.89 | 0.35 | 7.11 | 1.94 |
| Netherlands | 9.09 | 3.69 | 5.03 | 0.37 | 8.11 | 2.71 |
| New Zealand | 8.95 | 6.56 | 2.39 | | 8.34 | 5.94 |
| Portugal | 7.25 | 4.56 | 2.57 | 0.13 | 6.18 | 3.49 |
| Spain | 9.08 | 2.76 | 4.58 | 1.73 | 8.40 | 2.08 |
| Switzerland | 8.44 | 2.03 | 6.29 | 0.12 | 7.86 | 1.45 |
| United Kingdom | 12.89 | 9.21 | 3.58 | 0.10 | 9.77 | 6.09 |
| **Simple average** | 9.18 | 3.77 | 4.20 | 0.88 | 8.22 | 2.79 |
| **Weighted average** | 9.02 | 3.68 | 4.58 | 0.72 | 7.79 | 2.43 |

*Annex II*
# Glossary of Main Terms

**Compensation of Employees** (CE) is composed of all payments by governments of wages and salaries to their employees, including Social Security schemes and similar schemes. In general, Compensation of Employees takes the largest share of Final Consumption Expenditure of government services.

**Consumption of Fixed Capital** (CFC) is the value, at current replacement cost, of the reproducible fixed assets – except the roads, dams and other forms of construction other than structures of the producers of government services – used up during a period of account as a result of normal wear and tear, foreseen obsolescence and the normal rate of accidental damage. Unforeseen obsolescence, major catastrophes and the depletion of natural resources are not taken into account.

**Final Consumption Expenditure of government services** (FCE) is the value of goods and services produced by governments for their own use on current account, that is the value of their gross output less the sum of the value of their commodity and non-commodity sales and the value of their own-account capital formation which is not segregated as an industry.

**General government** includes central government, state/provincial and local levels, as well as Social Security funds.

**Government acquisitions** refers to the definition of **Intermediate Consumption of producers of government services** (IC). It is defined as: acquisitions (purchases and transfers in kind) of new goods and services (mainly commodities) on current account, less net sales of similar second-hand goods and scraps and wastes therefrom, including durable goods acquired primarily for military purposes.

**Government procurement** refers to goods and services bought by the government for consumption and investment but not for resale. It generally covers two main types of expenditure: consumption expenditure and expenditure on capital formation, that is investment expenditure. These two types of expenditure are usually classified by government function.

**Total Expenditure** (TE) is composed of Final Consumption Expenditure (FCE) *less* Consumption of Fixed Capital (CFC) *less* Indirect Taxes (IT) *plus* Government Sales (SALES) *plus* Gross Fixed Capital Formation (GFCF). It is expressed as [(FCE – CFC – IT + SALES) + GFCF].

**Total Expenditure less Compensation** is the Total Expenditure (TE) *less* Compensation of Employees (CE). It is expressed as [(FCE – CFC – IT + SALES) + GFCF – CE].

**Total Expenditure less Compensation and Defence** is the Total Expenditure (GE), excluding defence-related expenditure and investment, *less* Compensation of Employees (CE), excluding defence-related compensation of employees. It is expressed as $[((FCE – CFC – IT + SALES) – FCE_{def}) + (GFCF – GFCF_{def}) – (CE – CE_{def})]$.

# Reconciliation Between "Final Consumption Expenditure" and "Intermediate Consumption" Data Series

The System of National Accounts (SNA) contains statistical definitions on a wide-range of economic activities, including government activities. With respect to government activities, the SNA defines the term of "Intermediate Consumption" (IC) for government levels as government acquisitions of goods and services on the current account. IC is equal to "Final Consumption Expenditure" (FCE) *less* "Compensation of Employees" (CE), *less* "Consumption of Fixed Capital" (CFC) *i.e.* the allocation for depreciation, *less* "Indirect Taxes" (IT), *plus* "Government Sales" (SALES). These terms are defined in the SNA and national data referring to these terms may be directly available from the Table 6 series of the OECD publication "National Accounts Detailed Tables, Volume II".

**Government Current Acquisitions** = FCE – CE – CFC – IT + SALES = IC

To obtain a more complete coverage of all goods and services brought by government, *i.e.* government procurement net of CE, it is necessary to add the investment expenditure realised by governments – investment is defined as the "Gross Fixed Capital Formation" (GFCF). Total government acquisitions (hereby referred to as Total Expenditure less Compensation) can thus be measured either through the IC or FCE approaches or both depending on the availability of national data.

**Total Government Acquisitions** = Total Expenditure less Compensation

FCE – CE – CFC – IT + SALES + GFCF = IC + GFCF

Total government procurement or Total Expenditure (TE) is obtained by bringing back in the equation the compensation of employees (CE).

**Total Expenditure** (TE) = FCE – CFC – IT + SALES + GFCF = IC + GFCF + CE

By placing the assumption that defence-related procurement is reserved for national firms, government procurement net of CE and defence-related expenditures (Total Expenditure less Compensation and Defence) is obtained by removing defence-related component from every term from Total Expenditure less Compensation.

**Total Acquisitions less Defence** = Total Expenditure less Compensation and Defence

$$(FCE - FCE_{def}) - (CFC - CFC_{def}) - (IT - IT_{def}) + (SALES - SALES_{def}) - (CE - CE_{def}) + (GFCF - GFCF_{def})$$

Under the SNA 1968, defence-related GCF is fairly small and as a result defence-related depreciation ($CFC_{def}$) is insignificant. It is therefore assumed to equal zero. Similarly, it is assumed that there are no defence-related SALES ($SALES_{def}$) and no defence-related Indirect Taxes ($IT_{def}$).

**Total Acquisitions less Defence** = Total Expenditure less Compensation and Defence

$$(FCE - FCE_{def}) - CFC - IT + SALES - (CE - CE_{def}) + (GFCF - GFCF_{def})$$

The equality between the FCE and IC Approaches is maintained by removing the defence-related elements from the IC equation of Total Expenditure less Compensation.

**Total Acquisitions less Defence = Total Expenditure less Compensation and Defence**

$$IC - (FCE_{def} - CE_{def}) + (GFCF - GFCF_{def})$$

*Annex IV*

# Assumptions Used for Estimating Missing National Data

Quantifying the size of government procurement markets in OECD member countries has involved the gathering of national data for 30 standardised SNA-based statistical items but in several instances the required data was missing. To remedy the statistical gap, a series of estimates of missing data was undertaken. Table 8 indicates which data was available and estimated at individual country level. The available data is indicated with "1" and the missing data is indicated with a specific letter symbol, as indicated below. The most important data in terms of value, such as the final consumption expenditure, the compensation of employees and gross fixed capital formation, was widely available throughout the countries and offered a solid base for the study. Missing data was mainly concentrated in the items for government sales, indirect taxes and the defence-related expenditure. The assumptions used for estimating the missing national data are explained below. Given the reliance on estimated data to address the problem of missing national data, the reliability of the measured ratios of government procurement may be somehow undermined, particularly for the countries in which the number of missing data was large.

## Defence-related expenditure

Missing data on defence-related expenditure for the general government category was estimated by calculating the proportions that these types of expenditure represented in countries for which data was available for the three components involved, *i.e.* "final consumption expenditure", "compensation of employees" and "gross fixed capital formation". Since the levels of defence-related expenditure were considerably higher in France, Korea, the United Kingdom and the United States than in other countries, the weighted average of the proportions reported in other countries, excluding these four countries, was used. The estimated proportions for the general government category, GDP-weighted, were: 9.3% for defence-related FCE; 7.4 % for defence-related CE, and 1.5% for defence-related GFCF. Corroborated by the data supplied by countries, the figures for defence-related expenditure in the

categories of general government and central government are identical. Accordingly, when defence-related expenditure was estimated at the general government level, the same figure has been shown in the central government category. The estimated data is indicated with the symbol "D" in Table 8.

## Compensation of employees

Missing data for the compensation of employees (CE) in the four government levels was estimated for Canada and Australia by calculating the proportions that these types of expenditure represent relative to FCE in the countries for which CE data was available. The GDP-weighted average of the reported CE data in other countries was considered to be a representative indicator. On that basis, the estimated ratios for CE as a percentage of FCE for the government level in question were: 63.7 % at the general government; 55.2 % at the central government; 74.7% at the local government; and 45.6% at the Social Security fund level. The estimated data is indicated with the symbol "C" in Table 8. Specific adjustments were made for Denmark and Japan given the availability of CE data only at the general government level. The corresponding CE data for the sub-central levels was estimated by duplicating the observed proportion of FCE for each sub-central level in relation to FCE at the general government level. These estimated data are indicated with the symbol "C%" in Table 8.

## Gross fixed capital formation

Specific adjustments were made for gross fixed capital formation (GFCF) in Hungary and New Zealand. In both cases, GFCF data was only available for the general government. GFCF for the remaining government levels were estimated by duplicating the observed proportions of FCE for each level in relation to FCE at the general government level in the country in question. These are indicated with the symbol "G%" in Table 8.

## Consumption of fixed capital

Missing data on consumption of fixed capital (CFC) in the four government levels was estimated by calculating the proportions that these types of expenditure represent relative to final consumption expenditure in countries for which such data was available. A GDP-weighted average of the reported information was considered to be a representative indicator. On that basis, the estimated ratios for CFC as a percentage of FCE for the government category in question are: 5.8% at the general government; 3.2% at the central government; 8.8% at the local government; and 2.3% at the Social Security fund level. These estimated data are indicated with the symbol "CFC" in

Table 8. A specific adjustment was made for the Czech Republic since it reported CFC for the general government only. CFC for the remaining levels were estimated by duplicating the observed proportions of FCE for each level in relation to FCE at the general government level. It is indicated with the symbol "CFC%' in Table 8.

## Sales

Missing data on sales in the four government levels was estimated by calculating the proportions that these types of expenditure represent relative to FCE in countries for which such data was available. A GDP-weighted average of the reported information was considered to be a representative indicator. On that basis, the estimated ratios for sales as a percentage of FCE for the government category in question are: 13% at the general government; 3.1% at the central government; 21.4% at the local government; and 7.3% at the Social Security fund level. These estimated data are indicated with the symbol "S" in Table 8. Specific adjustments were made for Denmark, Japan and New Zealand, since they reported sales for the general government only. Sales for the remaining levels were estimated by duplicating the observed proportions of FCE for each level in relation to FCE at the general government levels in the country in question. These are indicated with the symbol "S%" in Table 8.

## Indirect taxes

Missing data on indirect taxes in the four government levels was estimated by calculating the proportions that these types of expenditure represent relative to FCE in countries for which such data was available. A GDP-weighted average of the reported information was considered to be a representative indicator. On that basis, the estimated ratios for sales as a percentage of FCE for the government category in question are: 1.1% at the general government; 1.0% at the central government; 1.0% at the local government; and 2.1% at the Social Security fund level. These estimated data are indicated with the symbol "IT" in Table 8. Specific adjustments were made in several countries, since they reported indirect taxes at the general government only. Indirect taxes for the remaining levels were estimated by duplicating the observed proportions of FCE for each level in relation to FCE at the general government levels in the country in question. These are indicated with the symbol "IT%" in Table 8.

Table 8.   **Available and estimated data**

| National Accounts | Line number | Canada | USA | Australia | Japan | Korea | New Zealand | Austria | Belgium | Czech | Denmark | Finland | France | Germany | Greece |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Missing annual data | | | | 97 | | 97 | 95-97 | 97 | | 90-92 | 96-97 | | all ex 93, 95 | 90, 97 | |
| **General government** (Central Government + Local Government + Social Security Fund) | | | | | | | | | | | | | | | |
| Final Consumption Expenditure (FCE) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Consumption of Fixed Capital (CFC) | 2 | 1 | 1 | 1 | 1 | 1 | CFC | 1 | 1 | 1 | 1 | 1 | 1 | 1 | CFC |
| Sales | 3 | S | 1 | S | 1 | 1 | 1 | 1 | S | S | 1 | S | 1 | 1 | S |
| Indirect Taxes (IT) | 4 | IT | 1 | IT | 1 | 1 | 1 | 1 | 1 | 1 | 1 | IT | 1 | 1 | IT |
| FCE defence-related | 5 | D | 1 | 1 | 1 | 1 | 1 | 1 | 1 | D | 1 | 1 | 1 | 1 | D |
| Compensation of employees (CE) | 6 | C | 1 | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| CE defence-related | 7 | D | 1 | D | 1 | 1 | 1 | 1 | 1 | 1 | D | D | 1 | 1 | D |
| Gross Fixed Capital Formation (GFCF) | 8 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| GCF defence-related | 9 | D | 1 | 1 | D | 1 | 1 | D | D | 1 | 1 | 1 | 1 | 1 | D |
| **Central government** | | | | | | | | | | | | | | | |
| Final Consumption Expenditure (FCE) | 10 | 1 | 1 | 1 | 1 | 1 | FCE% | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Consumption of Fixed Capital (CFC) | 11 | 1 | 1 | 1 | 1 | 1 | CFC | 1 | 1 | CFC% | 1 | 1 | 1 | 1 | CFC |
| Sales | 12 | S | 1 | S | S% | 1 | S% | 1 | S | S | S% | S | 1 | 1 | S |
| Indirect Taxes (IT) | 13 | IT | 1 | IT | IT% | 1 | 1 | 1 | IT% | IT% | IT% | IT | 1 | 1 | IT |
| FCE defence-related | 14 | D | 1 | 1 | 1 | 1 | 1 | 1 | 1 | D | 1 | 1 | 1 | 1 | D |
| Compensation of employees (CE) | 15 | C | 1 | C | C% | 1 | 1 | 1 | 1 | 1 | C% | 1 | 1 | 1 | 1 |
| CE defence-related | 16 | D | 1 | D | 1 | 1 | 1 | 1 | 1 | 1 | D | D | 1 | 1 | D |
| Gross Fixed Capital Formation (GFCF) | 17 | 1 | 1 | 1 | 1 | 1 | G% | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| GCF defence-related | 18 | D | 1 | 1 | D | 1 | 1 | D | D | 1 | 1 | 1 | 1 | 1 | D |
| **Local government** (including State and Provincial Government) | | | | | | | | | | | | | | | |
| Final Consumption Expenditure (FCE) | 19 | 1 | 1 | 1 | 1 | 1 | FCE% | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Table 8. **Available and estimated data** (cont.)

| National Accounts | Line number | Canada | USA | Australia | Japan | Korea | New Zealand | Austria | Belgium | Czech | Denmark | Finland | France | Germany | Greece |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Missing annual data | | | | 97 | | 97 | 95-97 | 97 | | 90-92 | 96-97 | | all ex 93, 95 | 90, 97 | |
| Consumption of Fixed Capital (CFC) | 20 | 1 | 1 | 1 | 1 | 1 | CFC | 1 | 1 | CFC% | 1 | 1 | 1 | 1 | CFC |
| Sales | 21 | S | 1 | S | S% | 1 | S% | 1 | S | S | S% | S | 1 | 1 | S |
| Indirect Taxes (IT) | 22 | IT | 1 | IT | IT% | 1 | 1 | 1 | IT% | IT% | IT% | IT | 1 | 1 | IT |
| Compensation of employees (CE) | 23 | C | 1 | C | C% | 1 | 1 | 1 | 1 | 1 | C% | 1 | 1 | 1 | 1 |
| Gross Fixed Capital Formation (GFCF) | 24 | 1 | 1 | 1 | 1 | 1 | G% | 1 | 1 | 1 | 1 | 1 | 1 | 1 | I |
| **Social Security Fund** | | | | | | | | | | | | | | | |
| Final Consumption Expenditure (FCE) | 25 | 1 | | | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | I |
| Consumption of Fixed Capital (CFC) | 26 | CFC | | | 1 | 1 | | 1 | 1 | CFC% | 1 | 1 | 1 | 1 | CFC |
| Sales | 27 | S | | | S% | 1 | | 1 | S | S | S% | S | 1 | 1 | S |
| Indirect Taxes (IT) | 28 | IT | | | IT% | 1 | | 1 | IT% | IT% | IT% | IT | 1 | 1 | IT |
| Compensation of employees (CE) | 29 | C | | | C% | 1 | | 1 | 1 | 1 | C% | 1 | 1 | 1 | I |
| Gross Fixed Capital Formation (GFCF) | 30 | 1 | | | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | I |

Table 8.   **Available and Estimated Data** (cont.)

| National Accounts | Line number | Hungary | Iceland | Ireland | Italy | Nether-lands | Norway | Poland | Portugal | Spain | Sweden | Switzer-land | Turkey | UK | Slovak |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Missing annual data | | | | | 96-97 | 97 | | 90-94, 97 | 96-97 | 96-97 | 90-92 | 97 | | 95-97 | 90-94 |
| **General government** (Central Government + Local Government + Social Security Fund) | | | | | | | | | | | | | | | |
| Final Consumption Expenditure (FCE) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Consumption of Fixed Capital (CFC) | 2 | CFC | 1 | 1 | 1 | 1 | 1 | CFC | CFC | 1 | 1 | 1 | CFC | 1 | 1 |
| Sales | 3 | S | S | S | 1 | 1 | S | S | 1 | 1 | S | 1 | S | S | 1 |
| Indirect Taxes (IT) | 4 | IT | IT | IT | 1 | 1 | IT | IT | 1 | IT | IT | 1 | IT | 1 | 1 |
| FCE defence-related | 5 | D | D | 1 | 1 | 1 | 1 | D | 1 | 1 | 1 | D | D | 1 | D |
| Compensation of employees (CE) | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| CE defence-related | 7 | D | D | 1 | 1 | 1 | 1 | D | D | D | 1 | D | D | D | D |
| Gross Fixed Capital Formation (GFCF) | 8 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| GCF defence-related | 9 | D | D | 1 | 1 | 1 | 1 | D | D | D | 1 | D | D | 1 | D |
| **Central government** | | | | | | | | | | | | | | | |
| Final Consumption Expenditure (FCE) | 10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Consumption of Fixed Capital (CFC) | 11 | CFC | 1 | 1 | 1 | 1 | 1 | CFC | CFC | 1 | 1 | 1 | CFC | 1 | 1 |
| Sales | 12 | S | S | S | 1 | 1 | S | S | 1 | 1 | S | 1 | S | S | 1 |
| Indirect Taxes (IT) | 13 | IT | IT | IT | IT% | 1 | IT | IT | IT% | IT | IT | IT% | IT | 1 | 1 |
| FCE defence-related | 14 | D | D | 1 | 1 | 1 | 1 | D | 1 | 1 | 1 | D | D | 1 | D |
| Compensation of employees (CE) | 15 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| CE defence-related | 16 | D | D | 1 | 1 | 1 | 1 | D | D | D | 1 | D | D | D | D |
| Gross Fixed Capital Formation (GFCF) | 17 | G% | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| GCF defence-related | 18 | D | D | 1 | 1 | 1 | 1 | D | D | D | 1 | D | D | 1 | D |
| **Local government** (including State and Provincial Government) | | | | | | | | | | | | | | | |
| Final Consumption Expenditure (FCE) | 19 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Consumption of Fixed Capital (CFC) | 20 | CFC | 1 | 1 | 1 | 1 | 1 | CFC | CFC | 1 | 1 | 1 | CFC | 1 | 1 |
| Sales | 21 | S | S | S | 1 | 1 | S | S | 1 | 1 | S | 1 | S | S | 1 |

Table 8.   **Available and Estimated Data** (cont.)

| National Accounts | Line number | Hungary | Iceland | Ireland | Italy | Nether-lands | Norway | Poland | Portugal | Spain | Sweden | Switzer-land | Turkey | UK | Slovak |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Missing annual data | | | | | 96-97 | 97 | | 90-94, 97 | 96-97 | 96-97 | 90-92 | 97 | | 95-97 | 90-94 |
| Indirect Taxes (IT) | 22 | IT | IT | IT | IT% | 1 | IT | IT | IT% | IT | IT | IT% | IT | 1 | 1 |
| Compensation of employees (CE) | 23 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Gross Fixed Capital Formation (GFCF) | 24 | G% | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Social Security Fund** | | | | | | | | | | | | | | | |
| Final Consumption Expenditure (FCE) | 25 | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | | 1 | 1 |
| Consumption of Fixed Capital (CFC) | 26 | CFC | 1 | 1 | 1 | 1 | | | CFC | 1 | 1 | 1 | | 1 | 1 |
| Sales | 27 | S | S | S | 1 | 1 | | | 1 | 1 | S | 1 | | 1 | 1 |
| Indirect Taxes (IT) | 28 | IT | IT | IT | IT% | 1 | | | IT% | IT | IT | IT% | | 1 | 1 |
| Compensation of employees (CE) | 29 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| Gross Fixed Capital Formation (GFCF) | 30 | G% | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |

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