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## SUMMARY RECORD

**PRODUCTIVITY MEASUREMENT IN THE GENERAL GOVERNMENT SECTOR**  
Expert Meeting, OECD, Paris, 18-19 March, 1999

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## **PRODUCTIVITY MEASUREMENT IN THE GENERAL GOVERNMENT SECTOR**

**Expert Meeting, OECD, Paris, 18-19 March, 1999**

### **Summary Record**

#### **Introduction**

1. The past two decades has seen increased public management change. Reformers for the most part say that public management reform has achieved or been consistent with observations of increased efficiency. However, information in this area has been imprecise. Statistical and budgetary agencies from various countries have made efforts to measure general government productivity. These efforts are generally made in isolation, often employing different methods. Given the increased availability of information on inputs and the nature and volume of government outputs, the Public Management Service (PUMA) believes there is both potential to improve information on general government productivity and interest on the part of governments in having guidance on this issue. PUMA called this expert meeting for three key purposes:

- To identify an appropriate measure of productivity by discussing the relative progress, merit and application of different productivity measurement methods.
- To assess the policy relevance of productivity measures in the general government sector.
- To identify an appropriate way forward for PUMA in assessing the productivity impact of public sector reforms in OECD Member Countries.

2. Following presentations on the National Accounts context and national experiences, three key areas emerged during discussions and are the focus of this summary. These areas include:

- Incorporating changes in quality into productivity measurement.
- Determining output indicators and measures.
- Policy relevance and the use of output and productivity measures.

#### **The National Accounts Context**

3. A large part of government output is not sold, therefore making such “non-market” output difficult to measure in the National Accounts in both current and constant price terms. Traditionally, countries measure non-market output value by summing costs at current price values. In the absence of prices, constant price estimates are based on deflating the cost components or by using labour inputs. A major problem with this practice is that such estimates will largely show no productivity change. Attempts are being made to improve the situation. Specifically:

- This issue was a major item on the agenda of the OECD National Accounts meetings. The Statistics Directorate of the OECD is currently working on measures for specific sectors (health and education) in association with experts from Statistical National Offices.

- The European Commission has recommended in the form of ESA 95 that national accounts concerning the government sector be based on output indicators.
- Eurostat has a major research program under way to improve price and volume measures for non-market output, with task forces established to cover health, education and general administration. Eurostat uses a three-way classification of methods for measuring non-market output, with input based methods expected to be eventually outlawed. The primary aim of Eurostat is to ensure comparability of national accounts between European Union countries for administration purposes (i.e. Maastricht criteria).

### **The National Experiences**

4. Each expert outlined developments in their country. Further information is available from the country reports provided by these experts.

#### ***The Australian Experience***

5. Australia is pursuing an output indicator approach to measure productivity in the government sector, and to replace existing output measures (that are based on the cost of inputs). They have developed output indicators for health and education, which are being assessed with a view to their incorporation into the Australian National Accounts. Output indicators are also being developed for crime and justice; work on other government services will follow. The expert from Australia said the degree of disaggregation of output (say, the number of health services) had a detectable effect on the final aggregated output value. Further, attention had to be paid to developing consistent time series; this may be affected by the stability of the classification schemes for government services.

#### ***The Dutch Experience***

6. In 1992, the Netherlands adopted the “modified deflator method” for measuring the production volume of government output in their national accounts. This method avoids estimating outputs. This change was fuelled by the demands of European unification. Prior to implementation, Statistics Netherlands examined the possible use of the output indicator approach and the structural determinants method for measuring government output. All three methods yielded almost identical results. The Output Indicator approach was not adopted because the output indicators were seen as debatable and there was a lack of output information. However, further research will be undertaken on this method.

#### ***The Finnish Experience***

7. The Finnish measures general government productivity separate to the national accounts using an output indicator approach. They aim to get a widespread coverage of outputs for the government sector. Outputs are measured for the local and central government level, and have been defined for most public services, including collective ones. Central government agencies are responsible for defining their own outputs. These output indicators will eventually be incorporated into the national accounts.

### *The Swedish Experience*

8. In the Swedish context, studies of productivity in the government sector have applied an output indicator approach and Data Envelope Analysis Method (DEA). The first comprehensive report on productivity in the Swedish public sector appeared in 1986. In addition, the Swedish are working on output indicators for health and education to incorporate into their national accounts.

### *The United Kingdom Experience*

9. The United Kingdom is moving towards measuring productivity in the general government sector. They have incorporated output measures for education, health and social security into their national accounts since 1986. Their aim is to incorporate the remaining half of output indicators for the government sector into their national accounts. The expert from the United Kingdom introduced the concept of using a 'proxy' for measuring non-market output. A 'proxy' output measure is considered when a direct measure of output is difficult to find.

### **Incorporating Changes in Quality**

10. The quality of government outputs can change. However, in the absence of prices for the non-market sector, these changes cannot be measured. This is a key methodological issue. All experts cited incorporating quality changes as integral to improving measures of general government productivity at the aggregate level. The problem of quality measurement is not confined to the non-market sector, with quality problems also experienced in parts of the market sector (i.e. housing, banking and insurance).

11. The majority of countries experienced difficulty with quality indicators for education. These difficulties generally arose from a difficulty in identifying the relevant information. For instance, it was found that available measures such as teachers hours do not indicate quality changes in education.

12. Quality changes can be observed through adjusting weights (compiled from input costs) and adding new products. However, the expert from Sweden noted that quality changes might be adrift before new outputs are introduced, and the use of input costs can be misleading. It is difficult to evaluate differences in quality, for instance, the cost of a new technology may be cheaper but have an increased quality.

13. In addition to the problem of selecting an appropriate measure of quality, the expert from Australia identified the problem of "binding" the quality indicators to the output volume measures as a key methodological issue. This amounts to selecting an appropriate weight to adjust output for changes in quality. In the absence of prices reflecting the different quality characteristics of governments services, the expert from Australia noted that the choice of weight is often subjective.

14. Specifically, the experts from Australia and Sweden outlined a number of methods for dealing with quality:

- Having regard to people's willingness to pay for services of different quality (or their degree of satisfaction with services). The methods outlined to deduce this information included customer evaluation, using price discrimination information and time based evaluations.
- Using the DEA method, which can have quality as one of the output indicators.

- Working back from outcomes to determine the quality of outputs. This requires the analyst to control or adjust for the other influences on the changes in outcomes.

15. The issue of quality can be dealt with more easily at the micro levels. The expert from Sweden noted that implicit measures of quality could be used.

### **Determining Output Indicators and Measures**

16. Experts raised two key problems in the area of outputs:

- Identifying outputs.
- Measuring outputs.

17. Countries noted lack of data as a major problem in output measurement, with many output indicators and measures in the development stage. The key focus of countries was on output indicators and measures for the education and health sectors. There was general agreement on the output indicators selected for these areas.

18. Country's experience with output indicators and measures for public administration is less developed than those for health and education. Some countries noted their work in the areas of policy and defence, however there was general agreement that more work is required in this area.

19. Outputs can be identified for a number of tasks. The United Kingdom noted that outputs, which are individually consumed, are more easily specified than those collectively consumed, as the unit of output can be defined. They classified outputs into three categories:

- Individually consumed outputs
- Outputs consumed by government
- Public goods and collective services

20. Experts noted the characteristics of outputs are generally determined in two ways. They can be determined by the individual agency or generated from the centre of government by budgetary or statistical agencies.

21. Two points of divergence between public managers and national accountants were noted for output measurement. Specifically:

- Public managers and national accountants specify outputs for different purposes. Public managers primarily specify outputs for budgetary, contractual and accountability purposes. For the purposes of public management, agencies may specify intermediate outputs, those that also serve as inputs to other agencies. As outputs must be final for the purposes of national accounts, there may be the possibility of double counting in this context.
- Public managers face different constraints to national accountants. For instance, agencies in different countries may have to specify outputs in varying levels of detail according to the level of accountability required.

### **Additional Methodological Issues**

22. A number of methodological issues were noted in discussions, however, they are not discussed in detail in this summary. These issues include:

- Disaggregation of outputs;
- The use of time series. For example, the stability of classifications over time and the need for long-term time series to use for macro analysis;
- The use of intermediate outputs.

### **Policy Relevance and Use of Output and Productivity Measures**

23. Experts emphasised two key uses for output and productivity measures:

- Managerial purposes.
- Macroeconomic purposes.

24. In most countries, the primary driver and use for measuring non-market outputs and productivity was for incorporation into the National Accounts. A key question was how these measures could be applied for managerial purposes. Experts cited a number of current and potential public management uses for this information. Specifically, the information has, or is aimed at allowing Ministers, Parliament and government agencies to:

- Monitor and evaluate the performance of agencies and delivery units. In Finland, aggregate results are reported to Parliament on an annual basis.
- Monitor the benefits of microeconomic and administrative reform. In Australia, this is a key objective for measuring general government productivity.
- Identify areas for reform. In the United Kingdom this information is used to examine government expenditure and assists in identify and areas for contracting out.
- Assist in budgetary processes. In the future, the new measures of productivity may be used by the Australian Department of Finance and other central budgeting agencies when determining individual agency expenditure limits. Further, the Australian Bureau of Statistics has worked with budgeting agencies and departments to assist the definition of departmental outputs and the specification of performance indicators. This effort is allied to the new accruals/output/outcome framework for public financial management being developed in Australia.

### **Assessing Impact of Government Reforms**

25. The output indicator approach was identified by experts as the appropriate method for measuring productivity at the general government level. However, experts did not consider information currently contained in the National Accounts as sufficient to facilitate uniform studies of productivity impacts in Member Countries.

26. Experts agreed that studies exploring productivity shifts in the general government sector in the short term will need to use micro information rather than national accounting or global data. It was noted that even if aggregate data were available, it is highly likely that a good deal of the underlying analysis to explain shifts in technical efficiency would need to draw from micro data, as it does in the private sector.

27. The expert from Sweden introduced the possibility of drawing together available macro productivity information to piece together similarities and trends in general government productivity across countries. PUMA could add to this information, as it became available.

28. The expert from Australia cautioned that the use of the DEA method on multi-country samples would be costly and time consuming, and could pose considerable technical problems. There was general consensus that the DEA method is useful as a check of results generated through other methods; for this purpose, samples of modest size may suffice.

### **PUMA Contribution**

29. A key area of mutual interest between national statisticians and public managers was the measurement of outputs. National statisticians and public managers want to specify and measure outputs in a mutually beneficial way, establishing a pool of information useful for both National Accounts and public management purposes.

30. There was consensus that PUMA, together with the Statistics Directorate of the OECD should consider ways to take the development the output indicator method further by providing guidance on output definition and measurement for the general government sector. This could be achieved by:

- Providing principles and good examples of productivity measurement.
- Identifying and clarifying various concepts currently used in countries (efficiency, output classes or groups, performance, and productivity).

31. PUMA is intending to be mainly analytical in making links between the implementation of reforms and its results. However, there is currently an absence of empirical evidence in this area. Finally, experts noted that OECD should co-ordinate its work with that of Eurostat.

### **Conclusions**

32. In summary, there was general consensus amongst participants that:

- The output indicator approach is the appropriate method for measuring productivity both at the micro and the aggregate levels.
- At this stage, information contained in the National Accounts is not sufficient to facilitate uniform studies of productivity impacts in Member Countries.
- Studies that wish to explore and explain productivity shifts in the general government sector will need to use micro rather than national accounting or global data in the short term.
- There is some commonality of interest between national accountants and public managers.

- The OECD can make a significant contribution to the measurement of non-market outputs for both national accounting and budgetary purposes.

### **Next Steps**

33. PUMA will:

- Consider ways to take non-market output measurement further in conjunction with the Statistics Directorate of the OECD.
- Prepare a summary of the key conclusions of the meeting and a proposal for work to present to Senior Budget Officials in June.