

Measuring Public Sector
Productivity: Lessons from
International Experience

CPMR Discussion Paper
35

Measuring Public Sector
Productivity: Lessons from
International Experience

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FOREWORD

This paper is the thirty-fifth in a series undertaken by the Committee for Public Management Research. The Committee is developing a comprehensive programme of research designed to serve the needs of the future developments of the Irish public service. Committee members come from the following eight departments: Finance; Environment, Heritage and Local Government; Health and Children; Taoiseach; Transport; Communications, Marine and Natural Resources; Social and Family Affairs; Office of the Revenue Commissioners and also from Trinity College Dublin, University College Dublin and the Institute of Public Administration.

This series aims to prompt discussion and debate on topical issues of particular interest or concern. The papers may outline experience, both national and international, in dealing with a particular issue. Or they may be more conceptual in nature, prompting the development of new ideas on public management issues. They are not intended to set out any official position on the topic under scrutiny. Rather, the intention is to identify current thinking and best practice.

We would very much welcome comments on this paper and on public management research more generally. To ensure that the discussion papers and wider research programme of the Committee for Public Management Research are relevant to managers and staff, we need to hear from you. What do you think of the issues being raised? Are there other topics you would like to see researched?

Research into the problems, solutions and successes of public management processes and the way organisations can best adapt in a changing environment has much to contribute to good management, and is a vital element in the public service renewal process. The Committee for Public Management Research intends to provide a service to

people working in public organisations by enhancing the knowledge base on public management issues.

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General information on the activities of the Committee for Public Management Research, including this paper and others in the series, can be found on its website: www.cpmr.gov.ie; information on Institute of Public Administration research in progress can be found at www.ipa.ie.

EXECUTIVE SUMMARY

This is a study of international experience in measuring public service productivity. The research informs possible approaches to public sector productivity measurement for the Irish public service. The study focuses on three main aspects of productivity measurement: attempts to develop comparative, cross-national assessments of public sector efficiency and performance; national and sectoral public sector productivity measurement initiatives; and a more micro-level examination of productivity measurement, looking at organisation-based and bottom up initiatives to measure public sector productivity.

Comparative cross-national assessments of public sector productivity and performance

There has been a growth in recent years in international comparative studies of public sector performance. Some of these explicitly include productivity measurements; others focus more generally on broad performance issues. These international studies provide scope for a comparative assessment of how Ireland is performing, particularly if studies are repeated over time, allowing trends to be established.

However, the studies themselves warn of the danger of putting too much faith in drawing comparisons, given qualifications about the type and reliability of data used to generate the indicators in the studies. It is clear that findings are of a tentative nature, and that improvements are needed if such studies are to provide a sound evidence base. In the context of improving the evidence base, the OECD's *Management in Government: Comparative Country Data* project, started in 2006, is a significant initiative.

National and sectoral public sector productivity measurement initiatives

In recent years, various countries at both national and sectoral levels have engaged in productivity measurement

initiatives. Brief reviews of progress in the UK, Finland, Sweden and Australia are examined here. This is followed by illustrative examples of productivity measurement in three sectors: health, education and local government.

The evidence from national and sectoral studies of public sector productivity measurement is that despite efforts going back to the 1980s, the productivity measures being produced need to be interpreted cautiously. There is also the danger that over-simplistic use of the measures can lead to perverse consequences. Supporting evidence is needed to corroborate the findings of productivity measures.

A further general point emerging from the cases examined is the lead role being taken by national statistics offices in public sector productivity measurement initiatives. The involvement of the national statistics offices is required because of a Eurostat directive on developing output measures for the national accounts. National statistics offices also play a lead role in providing quality assurance and guarantees about data reliability and validity.

Where similar institutions are providing similar services, it is possible to develop comparative productivity measurements, as examples from the Australian states and from local government show. Using techniques such as frontier analysis it is possible to identify relatively efficient and relatively inefficient organisations. The same cautions as to data reliability and interpretations as raised above, however, still apply.

Organisation-based and bottom up initiatives on public sector performance measurement

Organisation level productivity measurement is likely to be a feasible and useful tool for those organisations that have clear, identifiable outputs that can be linked to inputs used. These measures do not necessarily need to cover the whole organisation, and may be indicators of productivity for discrete parts of the organisation.

Bottom up/service user measurements of performance, such as the time and cost associated with setting up a new business, are being developed in a number of places. While they are not productivity measurements in the strict sense

(as they focus on the outputs and broad performance of public sector organisations rather than linking this data to inputs in a direct manner) they do help provide a picture of what value is being delivered by public services in return for the expenditure supports provided. As such, they have a potentially important role to play in productivity measurement when interpreted in a broad sense. Bottom up measures can also be a helpful source of information to provide triangulation data for more conventional productivity studies.

Developing a framework for public sector productivity measurement in Ireland

Information on public sector productivity in Ireland is limited. So as to develop a broad range of measures of productivity and not rely on single data sources, a framework for the development of productivity measurement is outlined in the table below. This framework proposes that action be taken at a number of levels – cross-national, national and sectoral, and organisation-based and bottom up – to develop information on public sector productivity in Ireland. In this way, a diversity of approaches to productivity measurement can be used to provide a broad picture of productivity developments. The framework draws from lessons learned from the international experience outlined in this study.

*A framework for the development of public sector
productivity measurement in Ireland*

Productivity initiative	Action required
Cross-national comparative studies	<ul style="list-style-type: none"> • Track Ireland's comparative performance in periodic studies of public sector performance and efficiency such as the World Bank and European Central Bank studies. • Actively participate in and encourage the OECD <i>Management in Government: Comparative Country Data</i> initiative.
National and sectoral initiatives	<ul style="list-style-type: none"> • The Central Statistics Office should take a lead role in the development of the measurement of government output and subsequent productivity studies. • Annual output statements being developed by government departments should inform productivity studies. • The health and education sectors should be priorities for productivity studies. • Relevant state bodies and academic institutions should be encouraged to undertake research into public sector productivity measurement. • Benchmarking of comparable organisations should take place.
Organisation-based and bottom up initiatives	<ul style="list-style-type: none"> • Organisation-based measures of productivity should be developed, using annual output statements as a basis for this work. • Central agencies should sponsor a number of service user based studies of the efficiency of public service provision across a range of sectors, repeated periodically. • Benchmarking with comparable organisations should be encouraged.

Introduction

1.1 Background and context of the study

The pay awards recommended by the Public Service Benchmarking Body and implemented as part of the social partnership arrangements have generated significant public discussion about the productivity gains realised in return for pay increases in the public sector. The subject of public sector productivity is of growing concern to many interested parties. As Afonso, Schuknecht and Tanzi (2006) note in relation to public sector efficiency in European and emerging markets:

Health, education and similar activities absorb a large share of the government payroll and the personnel who work for government ... If mostly higher salaries absorb additional resources allocated to these activities and the higher salaries are not accompanied by higher productivity of the public employees, the higher public spending can be unproductive and produce little additional benefits to the students or patients.

But public sector productivity is notoriously difficult to measure, not only in Ireland but also internationally. Much productivity data for the public sector is of questionable validity and/or reliability. Assessing the productivity of policy-oriented organisations has proved particularly challenging.

A number of international studies have been carried out that address the issue of public sector productivity. Some of these studies examine 'whole of government' productivity and make comparisons between countries (for example see Social and Cultural Planning Office, 2004). Some studies focus on sectors (health, education etc) and may be country-based or aim to examine cross-national trends (for

example, see Atkinson, 2005). Other studies aim to track productivity changes over time in public administration in individual countries (such as productivity studies undertaken in Sweden, Ministry of Finance, 1997).

There are also initiatives underway at present that will further the examination of public sector productivity. A Eurostat directive on price and volume measurement of government output is generating work in European member states on improving output measures in the public service and the development of productivity measures (Eurostat, 2001)¹. The OECD public sector management and performance division are undertaking a project on *Management in Government: Comparative Country Data* that aims to develop comparable data and indicators of good government and efficient public services. The OECD proposes to take 3-5 years to develop the database, with an initial report at the end of 2006. The database will include information on government inputs and outputs and hence facilitate productivity assessment.

Given the current state of play with regard to public service productivity measurement, a phased approach has been adopted by CPMR for this research topic. In this first phase, a detailed examination of previous international experience in assessing public service productivity has been undertaken. This research will inform possible approaches to be developed for the Irish public service into the future. As such, it is intended to inform both future CPMR work and the work of others interested in this area.

1.2 Report structure

Chapter 2 deals with some of the definitions of productivity and the challenges associated with productivity measurement. Chapter 3 examines attempts to develop comparative, cross-national assessments of public sector efficiency and performance. In Chapter 4, national public sector productivity initiatives in a number of countries are outlined, together with sectoral studies (health, education etc) within countries. Chapter 5 is a more micro-level examination of productivity measurement, looking at organisation-based and bottom up initiatives to measure

public sector productivity. Finally, in Chapter 6, the lessons learned from international experience are drawn together to help develop a framework for the development of public sector productivity measurement in Ireland.

Some definitions and challenges

2.1 Introduction

Productivity is generally defined as a measure of the amount of output generated per unit of input. In many countries, including Ireland, public sector productivity has been assumed to be zero in the national accounts. The output of the government sector has been measured as of value equal to the total value of inputs. This output=input convention has increasingly come under scrutiny in recent years and is no longer accepted practice from 2006². The challenge is to devise alternative estimates based on output measurement, in a public sector context where there is provision of collective services, and where there is no market transaction in services provided to individuals in most instances.

If it is accepted that in reality changes in outputs are not likely to be directly equivalent to changes in inputs, Pollitt and Bouckaert (2004) note that public sector productivity may increase for a variety of reasons:

- where resources (inputs) decrease and outputs increase
- where resources remain the same and outputs increase
- where resources increase but outputs increase by an even larger amount
- where outputs remain static but resources decrease
- where outputs decrease but inputs decrease by an even larger amount.

However, this definition of productivity as being concerned with the relationship between inputs and outputs does not cover issues that many people have in mind when they talk about public sector productivity. A more general interpretation of productivity encompasses broader concerns about the outcomes achieved by the

public sector. In common parlance, when many people talk about public sector productivity, they have in mind the general question of what value they are receiving from public services in return for the application of public funds.

Putnam (1993) rejects the idea of including outcomes in productivity measurement. His argument is that to focus on outcomes (changes in health rather than patients treated; changes in educational status rather than numbers of lessons taught) includes changes over which the government has no control:

To include social outcomes in an assessment of government performance is to commit the 'Massachusetts Miracle Fallacy': only a modest part of the praise for the affluence of New England in the 1980s (and a similarly modest portion of the blame for the subsequent recession) was realistically attributable to state government, despite 1988 presidential campaign rhetoric to the contrary.

Notwithstanding the problems with assessing productivity using an outcomes focus as indicated above, in this paper, both the input/output measurement and broader assessments of public sector productivity, including a focus on outcomes, are included in the discussion on productivity. It is accepted that for national accounts purposes, and when attributing changes in productivity to the public sector, strict definitions are needed. But the broader interpretation of productivity as including a concern with outcomes, while having statistical and measurement limitations, nevertheless has resonance with the general public and may raise interesting questions even if it does not provide definitive answers.

Both the narrow, economic definition of productivity concerned with the input/output ratio and the broader productivity definition concerned with the input/outcome ratio can be considered sub-sets of public sector performance measurement. Performance measurement is not confined to issues of productivity, and may examine

inputs, outputs and outcomes without necessarily being concerned with the measurement of the ratio between them.

2.2 Challenges to public sector productivity measurement

Even when the definition of public sector productivity is confined to the relationship between inputs and outputs, there are challenges in measurement, both of inputs and outputs.

Inputs are made up of three elements: labour, procurement of goods and services and capital consumption (Atkinson Review, 2005). Measurement of each of these elements may pose particular challenges in practice. For example, with regard to labour, should number of hours worked (differentiated by skill) be used instead of the number of people employed? With regard to the measurement of outputs, the European Commission (2004) identify three important issues: how to define output; how to define aggregate output over a range of different products; and how to incorporate exogenous conditions, such as the general health condition of a patient.

A further challenge with regard to output measurement for productivity purposes is how to incorporate changes in the quality of outputs. The importance of this point is illustrated by Pritchard (2002a), of the Office of National Statistics in the UK, who states that: ‘...the measurement process must reflect the fact that 100 units of good quality this year represent more output than 100 units of a lesser quality last year’. Pritchard (2002b) goes on to further illustrate the importance and challenge of monitoring quality changes in outputs:

Our approach starts with the idea that producing something of a higher quality is equivalent to producing a higher volume of output: the quality is an attribute of the output (and not of the inputs). In the market sector, where goods and services have prices, there are several

options for measuring the amount which improved quality adds to the volume of production: they all relate in some way to price. But government services usually have no price. Nevertheless, the rate of change of quality may well be significant: and it is also an issue of public concern and debate, always in the spotlight. It is imperative that we try to bring quality change into our measure.

Yet another challenge with regard to measurement relates to possible time lags between the inputs and outputs. Money spent on public sector inputs may not have an impact in terms of improved outputs for some time (in some cases years) after the initial expenditure.

There are considerable technical and other challenges associated with measuring public sector productivity, however defined. This makes comparability of trends, over time and across sectors and countries, particularly problematic. In any discussion on measuring public sector productivity, these challenges must be borne in mind and factored into interpretations of findings.

Cross-national comparisons of public sector productivity and performance

3.1 Introduction

A small number of studies have been carried out that compare administrative efficiency and performance internationally at the aggregate level (Van de Walle, 2005). The main studies examined here are: a European Central Bank international comparison of public sector efficiency (Afonso, Schuknecht and Tanzi, 2003 and 2006); a report of the Social and Cultural Planning Office in the Netherlands on public sector performance (Social and Cultural Planning Office, 2004); and a World Bank study of governance indicators (Kaufmann, Kraay and Mastruzzi, 2005). In addition, the work of the OECD in developing a project on *Management in Government: Comparative Country Data*, referred to in section 1.1, is discussed.³

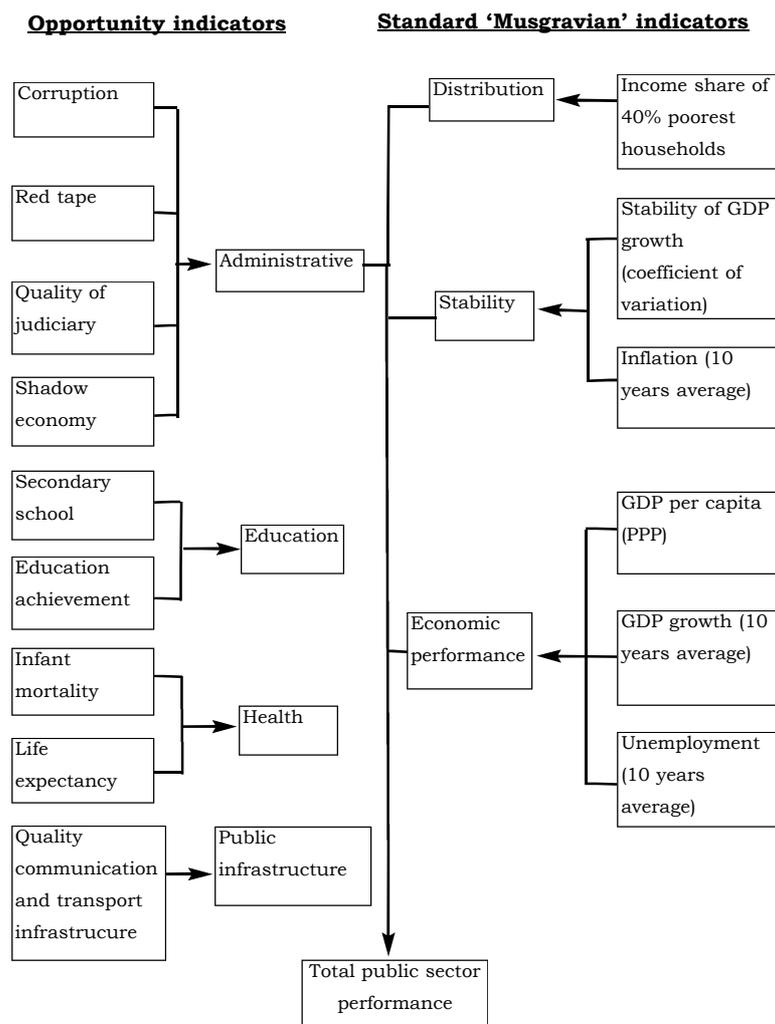
3.2 European Central Bank international comparison of public sector efficiency

Afonso, Schuknecht and Tanzi (2003) examine the performance and efficiency of the public sectors of twenty-three industrialised OECD countries. They develop measures of both public sector performance (which they define as the outcome of public sector activities) and efficiency (which they define as the outcome relative to the resources employed).

With regard to public sector performance, they define seven sub-indicators of public performance (see Figure 3.1). The first four examine administrative, education, health and public infrastructure outcomes. They term these 'opportunity' indicators, concerning the role of government in providing opportunities and a level playing field in the market process. The other three sub-indicators try to capture the traditional 'Musgravian' tasks for government of allocation, distribution and stabilisation (Musgrave, 1959), measuring income distribution, economic stability and

economic performance as a measure of allocative efficiency. Each sub-indicator is measured as a composite of a number of indices, as outlined in Figure 3.1.

Figure 3.1 Total public sector performance indicator



Source: Afonso, Schuknecht and Tanzi, 2003

With regard to public sector efficiency, public expenditure, expressed as a share of GDP, is used to reflect the opportunity costs of achieving public sector performance. In addition to total public spending, they examine average spending on goods and services, transfers, functional spending on education and health, and public investment. In order to arrive at efficiency indicators, public spending is normalised across countries.

The study finds that the difference in public sector performance overall is moderate across the sample countries. Countries with small public sectors (public spending less than 40 per cent of GDP) on average report the highest scores, especially for administrative and economic performance. Countries with large public sectors (public spending over 50 per cent Of GDP) show more equal income distribution. Regarding public sector efficiency, countries with small public sectors display considerably higher indicators of efficiency than countries with medium-sized or big public sectors. However, the authors caution that the results must be seen as indicative and need to be interpreted with great care.

This latter point about caution is well made. Taking the indicator of administrative performance as an illustration (and one particularly appropriate to this study), Van de Walle (2005) notes that contrasting this indicator with government goods and services expenditure to develop a measure of efficiency fails to recognise that the goods and services category in the national accounts is a crude approximation of what is spent on the public administration and judiciary. With regard to the four factors that make up the administrative indicator – corruption, red tape, quality of the judiciary and extent of the shadow economy – Van de Walle (2005) further notes that:

Despite this study being one of the only ones attempting to compare public sector efficiency internationally, the indicators used for administrative performance are defective. First, only four subfactors are used, neglecting many factors relevant for administrative

performance. Second, three out of four subfactors are of a purely subjective nature, as they are based on the executive surveys that are used for the World Economic Forum's World Competitiveness Yearbook, a survey which is ... based on rather small samples in some countries. Third, for one specific subfactor (confidence in the administration of justice), the authors rely on the World Competitiveness Yearbook, while much better survey material is available for measuring this subfactor.

But the study, despite these caveats, represents an interesting approach to cross-national assessment of public sector productivity and performance. The authors repeated the study to analyse public sector efficiency in the new member states of the European Union and emerging markets in Asia (Afonso, Schuknecht and Tanzi, 2006).

3.3 Netherlands Social, Cultural and Planning Office study of public sector performance

As part of the Dutch presidency of the European Union in the second half of 2004, the Dutch Ministry of the Interior and Kingdom Relations asked the Social and Cultural Planning Office of the Netherlands to investigate public performance in the EU member states and four major non-EU Anglo-Saxon countries (Social, Cultural and Planning Office, 2004). The report covers four main areas: education, health care, law and order, and public administration. It also assesses the overall performance of the public sector.

Education. Achievement and attainment criteria are used as criteria for effectiveness of the educational system. Achievement indicators are based on international comparative achievement tests, measuring reading and mathematical skills and scientific literacy among fifteen year olds. Attainment indicators used are the proportion of third level graduates in the population and the proportion of early school leavers. A single measure is used to combine achievement and attainment indicators. This measure is

set against the costs of education (per capita expenditure).

Health care. Life expectancy, infant mortality, proportion of healthy life years and general feeling of good health are used as indicators and combined to produce an index of health status to measure the effectiveness of national systems. Per capita expenditure on health care is used to determine cost-effectiveness.

Law and order. The number of convictions expressed as a proportion of the number of recorded offences is used to give a picture of the way the criminal justice system functions. Labour productivity is determined by the quotient of the number of convicted suspects and staff numbers of the police, public prosecutions department and criminal courts. In the prisons service, the number of prisoners per prison guard measures labour productivity.

Public administration. In the report, four indicators of government quality are used:

- the level of the bureaucracy: does bureaucracy hinder business decisions?
- the level of transparency: is transparency of government policy satisfactory?
- the level of effectiveness: are government decisions effectively implemented?
- the level of corruption: do bribing and corruption exist in the economy?

The first three of these indicators are measured using a survey among representatives of the business community in a range of countries (IMD, 2003). The corruption indicator is measured using the Transparency International composite index of corruption.

In a review of the work of the Social, Cultural and Planning Office, Kuhry, Pommer and de Kam (2006) note that:

By the very nature of its products – shaping policy in a wide variety of areas, law making, maintaining public order, managing the government apparatus – no ‘natural’ performance indicators are available for public administration as such. The functioning of government administrations can therefore only be measured by using subjective indicators. Such indicators reflect mainly trust and confidence in the civil service.

Overall performance of the public sector. The scores on various government functions are combined in one overall index of public sector performance. The combined score represents four main dimensions of performance: stabilisation and growth of the economy, distribution of welfare, allocation of public services, and quality of public administration. The overall performance is related to the resources absorbed by producers active in the public sector. Roughly speaking, the study finds little connection between public sector performance and the level of public and private spending. But using the global efficiency measure, Kuhry, Pommer and de Kam (2006) find:

By this measure, Finland is the most efficient in producing public services of high quality at moderately high costs, while – in terms of efficient production – Ireland scores slightly above average at low costs. Just behind these leaders we find Sweden, Denmark, Austria, Luxembourg and the Netherlands; the first three countries post relatively high spending levels, while the last two have fairly average spending. Australia, Canada, Spain and the Czech Republic combine an average performance score with fairly low government spending, while others (particularly Germany, Belgium and France) occupy fairly average positions in both respects. The US and the United Kingdom perform fairly poorly at relatively low spending levels.

One of the most striking outcomes is that the same clusters of countries repeatedly emerge in analyses of public sector performance, regardless of the policy area and characteristics reviewed. Again and again, Northern European countries, Western European countries, Southern European countries, Central European countries and Anglo-Saxon countries are demonstrated to form fairly consistent clusters.

As with the European Central Bank study, the authors urge caution with regard to the interpretation of the results.

3.4 World Bank governance indicators

Since 1996, the World Bank has been developing governance indicators as part of its work in promoting good governance. Governance indicators are produced for just over 200 countries every two years. Kaufmann, Kraay and Mastruzzi (2005) note that the governance indicators used measure six dimensions of governance: voice and accountability; political instability and violence; government effectiveness; regulatory quality; rule of law; and control of corruption. The indicators are based on several hundred individual variables measuring perceptions of governance, drawn from thirty-seven separate data sources constructed by thirty-one different organisations.

Most relevant from the perspective of this study is the government effectiveness indicator. It aims to measure the competence of the bureaucracy and the quality of public service delivery. A broad range of sources is used, including the Economist Intelligence Unit, World Economic Forum, Bertelsmann Foundation and Institute for Management Development (a full listing of sources and concepts measured is given in Annex 1). By taking this broad, encompassing approach, Van de Walle (2005) notes that: ‘...it covers a broad range of related concepts: red tape, quality of public schools, government stability, bureaucrats’ expertise, policy consistency, ability to deliver basic infrastructure’. Point estimates of the dimensions are

presented as well as margins of error for each country and period. Kaufmann, Kraay and Mastruzzi (2005) suggest that: 'An advantage of our measures of governance is that we are able to be explicit about the accompanying margin of error, whereas these are most often left implicit with objective measures of governance'.

Van de Walle (2005) provides a helpful critique of the World Bank governance indicators:

The World Bank Governance Indicators dataset is one of the most complete datasets to assess the quality of governance. Many of its composing indicators, however, are of a subjective nature, and therefore do not necessarily present us with a correct picture. The number of data sources employed by the World Bank, however, softens this criticism. But then again, this large number of data sources also leads to a very broad range of concepts covered, which make it difficult to determine *what* exactly is measured by government efficiency.

3.5 OECD *Management in Government: Comparative Country Data* project

The Public Governance Committee of the OECD has mandated the Public Governance and Territorial Development Directorate to assess the feasibility of developing comparable data and indicators of good government and efficient public services. This project, entitled *Management in Government: Comparative Country Data*, aims to provide good empirical data and indicators of good government. The intention is to move, on a phased basis, to the production of a publication provisionally entitled *Government at a Glance*, which will mirror the OECD's *Education at a Glance* publication and show comparative cross-national data on an annual basis.

An initial assessment of available data has been undertaken, alongside a detailed literature review (OECD, 2005). The focus is on several types of measures: inputs, processes, outputs, outcomes and antecedents or

constraints that put government efficiency in context. The intention is to produce a first working paper towards the end of 2006, mostly concerned with inputs and processes, as these are the most readily available data. Data concerning outputs and outcomes are seen as more difficult to gather, but the intention is to gradually improve coverage in these areas.

3.6 Conclusions

There has been a growth in recent years in international comparative studies of public sector performance. Some of these explicitly include productivity measurements; others focus more generally on broad performance issues. These international studies provide scope for a comparative assessment of how Ireland is performing, particularly if studies are repeated over time, allowing trends to be established.

However, the studies themselves warn of the danger of putting too much faith in drawing comparisons, given qualifications about the type and reliability of data used to generate the indicators used in the studies. It is clear that findings are of a tentative nature, and that improvements are needed if such studies are to provide a sound evidence base.

In the context of improving the evidence base, the OECD's *Management in Government: Comparative Country Data* project is a significant initiative. It is important that Ireland support this project so as to help develop an information base from which comparative performance and productivity data can be developed over time.

National and sectoral productivity measurement initiatives

4.1 Introduction

In recent years, various countries at both national and sectoral levels have engaged in productivity measurement initiatives. In this chapter, national initiatives are examined in the first instance, with brief reviews of progress in the UK, Finland, Sweden and Australia. This is followed by illustrative examples of productivity measurement in three sectors: health, education and local government.

4.2 National public sector productivity measurement initiatives

4.2.1 Measuring public sector productivity in the UK

Since 1988, the Office for National Statistics has been progressively moving away from the output=input approach to productivity, and incorporating direct measures of the volume of government output in the national accounts. By 2005, these direct output estimates accounted for two thirds of general government final consumption. In the context of this focus on output measurement, the UK government commissioned Sir Tony Atkinson to undertake a review of the measurement of government output in the national accounts. This review (Atkinson, 2005) provides a comprehensive overview of developments and recommendations for future progress.

The Atkinson review outlines a number of principles covering the measurement of outputs, inputs and productivity. One particularly significant point is that the review strongly recommends that, in principle, measures of output growth should take account of quality change. Also, and specifically with regard to productivity, the review states:

Outputs divided by inputs provides a measure of productivity change. However, the move from the (output=input) convention to direct measurement of government output should be carefully interpreted. It is a definite advance in the sense that government output is no longer simply assumed to equal measured inputs, but the move should not be seen as solving at a stroke the complex problem of measuring government productivity. The statistic obtained by dividing outputs by inputs may no longer be equal to 1 by definition, but no single number, however carefully constructed, can fully capture the performance of complex public services with multiple objectives. Productivity change should be interpreted in the light of a range of other information – the triangulation principle.

The UK government accepted the findings and recommendations of the Atkinson review, and the Office for National Statistics (ONS) is taking the lead role in taking forward the recommendations. To this end, the ONS has set up the UK Centre for the Measurement of Government Activity (UKCeMGA). The UKCeMGA issued its first annual report in 2006, outlining progress and in particular drawing strands of research on productivity analysis together in key areas such as health and education (Office for National Statistics, 2006a).

4.2.2 Measuring public sector productivity in Finland

Finland, along with the UK, is widely regarded as a European leader in public sector productivity measurement. A project was established to measure public sector productivity in Finland in 1995, located in Statistics Finland, the national statistics office. The aim of the project is: 'to develop a measurement and monitoring system for government sector production and productivity by using an output indicator method to measure the volume of output' (Niemi, 1998). In 1997, the scope of the project was expanded to include the measurement of the productivity of local government services.

Under the terms of the project, for central government services the final output and the output indicators are specified by the agencies themselves. Examples of output indicators are given in Annex 2. The agencies for which input and output data are gathered cover about 80 per cent of the compensation of employees in central government. Initial results show growth rates of output and productivity varying extensively. For local government, measurements cover educational, cultural and social services. To give some examples of output indicators, teaching hours are used as the output indicator for educational services, numbers of library visitors for libraries and number of bed days, customers or visits for social services (Niemi, 1998).

4.2.3 Measuring public sector productivity in Sweden

Sweden has been measuring public sector productivity since the mid-1980s. An Expert Group on Public Finances (a subcommittee under the Ministry of Finance) established a steering group to conduct the work. The steering group was supported by Statistics Sweden, the national statistics office (Ministry of Finance, 1997).

Particular focus is given to the development of output indicators for services. These include items such as the number of admitted patients for in-patient medical care, the number of learning hours for education, traffic volume as measured by vehicle kilometres for public roads, number of flying hours for the air force (Ministry of Finance, 1997). Attempts are made to adjust the quantity of outputs for quality variations where data are available. A number of lessons are drawn based on the experience of producing annual productivity measures over a period of time:

- Productivity varies greatly from year to year. To assess any given year, a time series of several years information is needed.
- Most agencies have several categories of output. Attributing the same weight to all categories may yield deceptive results. In the enforcement service, for example, counting cases dealt with regardless of

category gives a 2 per cent decrease in output from 1981 to 1992. If, however, different weights are assigned to different categories of output, to take into account differences in composition of the cases, the result is a 20 per cent increase in output.

- To measure the productivity of an agency as a whole means overheads must be taken into account.
- Results differ depending on the kind of price index chosen (Ministry of Finance, 1997).

Findings from the studies as summarised by Pollitt and Bouckaert (2004) suggest that:

A close examination of specific cases suggests that public management reforms can help to increase productivity, especially when carried out in conjunction with budget cuts or increases in demand for a service, which were not paralleled by any significant increase in resource inputs, but that management reforms in the absence of downward pressure on inputs are not necessarily terribly effective in improving productivity.

4.2.4 Measuring public sector productivity in Australia

In Australia, in 1993 the Council of Australian Governments established the *Review of Government Service Provision* to provide information on the effectiveness and efficiency of government services (Australian Productivity Commission, 2006). The review is conducted annually, and overseen by a steering committee of senior representatives from the central agencies of all the state governments, with the assistance of a secretariat provided by the Productivity Commission. Performance information is provided on fourteen service areas covering six main government functions: education; justice; emergency management; health; community services; and housing.

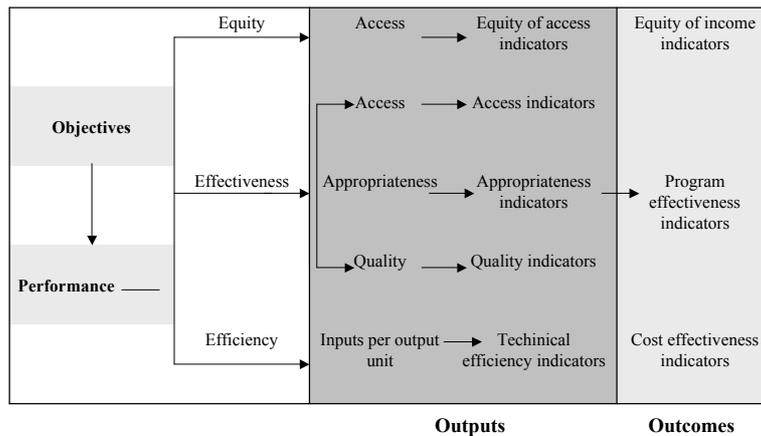
The report includes performance comparisons across jurisdictions for the services using a common method. The

general performance framework used is set out in Figure 4.1. It can be seen that both outputs and outcomes are measured, as well as efficiency, effectiveness and equity. With regard to efficiency, the report's focus is on technical efficiency:

Technical efficiency indicators measure how well services use their resources (inputs) to produce outputs for the purpose of achieving desired outcomes. Government funding per unit of output delivered is typically used as an indicator of technical efficiency – for example, recurrent funding per annual curriculum hour for vocational education and training.

Where there are shortcomings in the data, other indicators of efficiency are used (including partial productivity ratios such as staff level per student in government schools, staff per prisoner in corrective services and administrative costs as a proportion of total expenditure in services for people with a disability) (Australian Productivity Commission, 2006).

Figure 4.1 A general framework and examples of performance indicators



Source: Adapted from the Australian Productivity Commission, 2006

4.3 Sectoral productivity measurement

In this section, a small number of productivity studies are cited to give illustrative examples of the type of sectoral productivity information being produced in three sectors: health, education and local government.

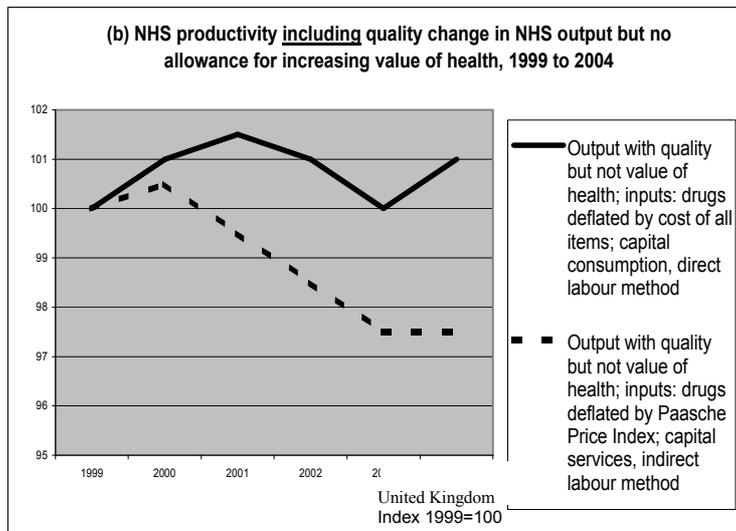
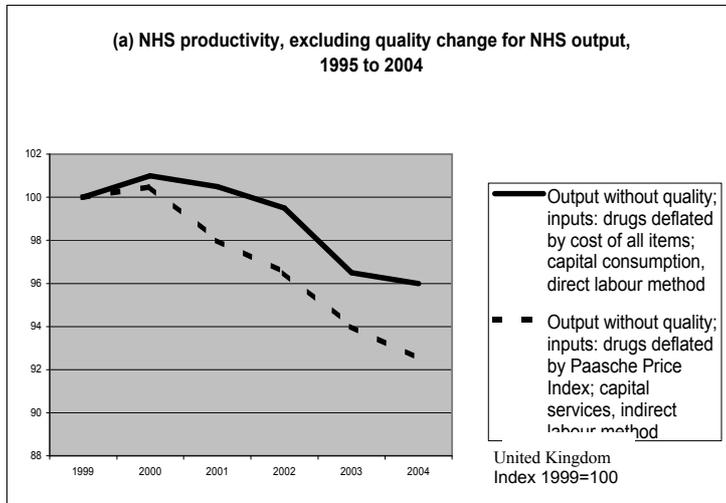
4.3.1 Health sector productivity measurement

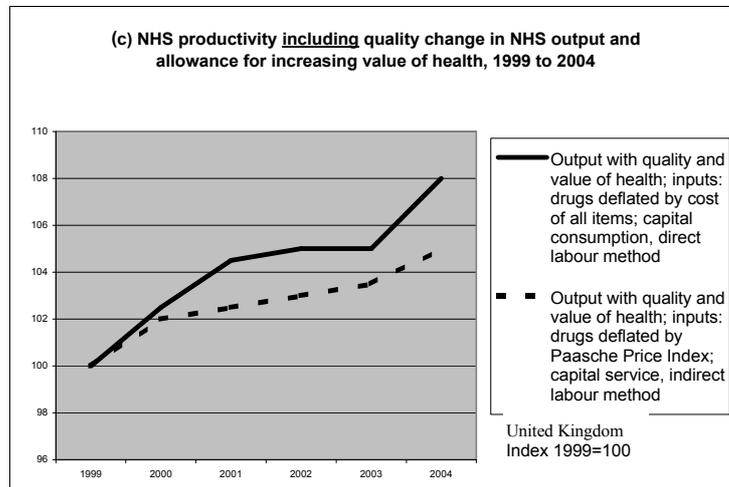
The UK Office for National Statistics (2006b) has published a major review of health service productivity. Using available data, the Office for National Statistics produced three different estimates of NHS productivity (see Figure 4.2 a, b, and c). The first estimate is based on current national accounts estimates of output. Using this measure, NHS productivity is estimated to have fallen during the period 1995 to 2004 by an average of between 0.6 and 1.3 per cent per year.

The second estimate is based on the principle outlined in the Atkinson Review (Atkinson, 2005) that output should be adjusted to take account of quality change. A number of quality indicators are used, including: survival rates; health effects; an adjustment for life expectancy for survival rates and health expectancy; waiting times; improvements in primary medical care; longer term survival rates for myocardial infarction; and patient experience. On this basis, productivity is estimated to have either increased by an average of 0.2 per cent per year, or has fallen by an average of 0.5 per cent per year.

The third estimate is also based on a recommendation outlined in the Atkinson review, that the value of NHS output should be adjusted by rising real earnings in the economy to reflect the fact that health becomes increasingly valuable in a growing and increasingly productive economy.⁴ On this basis, NHS productivity is estimated to have increased by an average of between 0.9 and 1.6 per cent per year.

Figure 4.2 NHS Productivity Estimates





Source: Adapted from the Office for National Statistics, 2006

These estimates of productivity are further tested against wider corroborative evidence:

... since 1991/92 the average length of stay in hospital has been falling steadily (apart from a small rise between 1999/00 and 2000/01); and there has been a steady increase in the rate for elective day case treatments. This suggests a shift towards more cost effective treatment and would be consistent with a productivity increase from NHS resources. At the same time, emergency readmission rates have increased very slightly over the period. If this requires additional NHS resources, this could dampen down productivity (Office for National Statistics, 2006b).

This process of checking productivity estimates against other corroborative evidence is known as triangulation. It is important in a context where 'It is unlikely that a single number for productivity will ever capture all the costs and

benefits of the NHS' (Office for National Statistics, 2006b).

4.3.2 Education sector productivity measurement

Education is one of the services measured by the review of government services in Australia. The framework model outlined in section 4.2.4 is used to develop a set of performance indicators for schools, as set out in Figure 4.3.

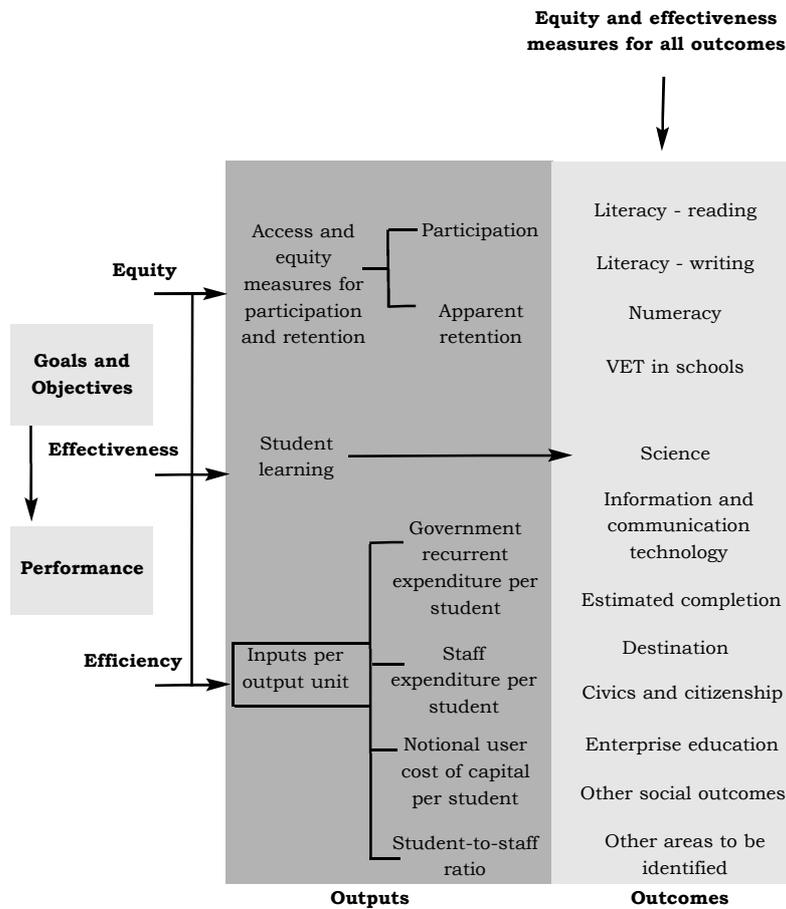


Figure 4.3 Performance indicators for schools

Source: Adapted from Banks, 2005

Equity indicators measure how special needs groups compare in terms of participation and retention rates. Effectiveness is measured in terms of learning outcomes with regard to reading, writing and numeracy. Efficiency is measured in terms of government expenditure per student, staff expenditure per student, and student to staff ratios (Banks, 2005).

The different states are compared and contrasted in terms of performance against the agreed indicators. Comparing the unit costs of providing a particular service across jurisdictions is seen as a way of helping states to identify if they have scope for improvements in their efficiency.

4.3.3 Local government productivity measurement

In the UK, changes in local government performance are assessed using a sample of sixty-three indicators including Best Value performance indicators, indicators from the Social Services Performance Assessment Framework, and indicators from the Department for Education and Skills (Martin and Bovaird, 2005). This grouping of indicators is used by the Office of the Deputy Prime Minister as a 'basket' of indicators showing the cost-effectiveness of local authorities. The indicators are arranged by service area (see Annex 3).

The basket of indicators suggests that overall performance has improved by 12.5 per cent between 200/01 and 2003/04. There are significant variations between authorities. There are also large variations between services, with particularly large improvements in waste management and culture. Martin and Bovaird (2005) suggest:

It seems the greatest improvements have been achieved in services where there has been a combination of increased funding, a strong focus on improvement targets set at national level and scope for significant re-engineering of service delivery.

Applying the principle of triangulation noted in section 4.3.1, Martin and Bovaird (2005) compare these results with other indicators of local government performance from the perspective of service providers and service users. With regard to service provider perceptions, a survey of 1,500 officers indicates that a large majority of respondents believe that services have improved over a three-year period. Eighty-four per cent believe that value for money has improved.

Surveys of public perception, however, reveal a different picture. User satisfaction surveys conducted as part of the Best Value initiative indicate a significant decline in public satisfaction with overall local authority performance between 2001 and 2003. This information is confirmed by an analysis of other survey data, including MORI national surveys. MORI surveys suggest that overall the proportion of respondents who believe their authorities provide good value for money declined from 49 per cent to 37 per cent between 1997 and 2002. Users of services consistently rate services more highly than non-users.

When similar services are provided by entities such as local authorities, there is also scope for comparative productivity analysis (as in the case of Australian states outlined in section 4.2.4). For example, Haubrich, Gutierrez and McLean (2006) use an econometric analysis technique called panel data analysis to try to identify relatively efficient and inefficient authorities.

4.4 Conclusions

The evidence from national and sectoral studies of public sector productivity measurement is that productivity measurement is still in its early stages. Despite efforts going back to the 1980s, the productivity measures being produced need to be interpreted cautiously. There is also the danger that over-simplistic use of the measures could lead to perverse consequences. For example, the number of vehicle kilometres is an output measure for public roads in Sweden. Using this measure, it is possible to increase

productivity by increasing vehicle kilometres, but this is likely to run counter to transport policy aimed at moving people from cars to public transport and cutting down on unnecessary travel: the policy goal may be to reduce vehicle kilometres.

It is clear that no single figure of productivity can be used for public sector activities, unless there is clear and widespread agreement that it is an appropriate measure. The Atkinson (2005) recommendation that a range of supporting information is needed to measure productivity change – the triangulation principle – is one that should be applied generally.

A further general point emerging from the cases examined here is the lead role being taken by national statistics offices in public sector productivity measurement initiatives. The involvement of the national statistics offices is required because of the Eurostat directive on the need to develop output measures for the national accounts, referenced in section 1.1. National statistics offices also play a lead role in providing quality assurance and guarantees about data reliability and validity.

Where similar institutions are providing similar services, it is possible to develop comparative productivity measurements, as the Australian states and local government examples examined show. Using techniques such as frontier analysis it is possible to identify relatively efficient and relatively inefficient organisations.⁵ The same cautions as to data reliability and interpretations as raised above, however, still apply.

Organisation-level and bottom up productivity measurement

5.1 Introduction

So far, the productivity measures examined have been sectoral or national in nature, and often driven from a 'top down' perspective. It is important to note that, at a more micro level, productivity measurement in the public sector can also take place at the level of the organisation and from a 'bottom up' or service user perspective.

5.2 Measuring organisational productivity in Denmark

Since 2004, all ministerial departments in Denmark are required to draw up efficiency strategies. Performance contracts are used to set targets and explicit requirements for productivity improvements are included. Previous years results are reviewed in annual reports. The Danish Immigration Service and Statistics Denmark provide two illustrative examples of productivity measurement (Finance Ministry, 2005).

Up to 2004, the Danish Immigration Service applied a measure of departmental productivity that assessed the number of cases dealt with per full time equivalent post. The measure comprised both the direct case specific resource usage and the total additional resource usage. From the performance contract of 2005 onwards, this measure has been refined to include only the direct case specific resource usage, termed case processing productivity. The case categories 'spontaneous asylum request' and 'application for family reunion' both show a considerable drop in estimated productivity between 2001 and 2004. In other case categories, productivity is estimated as constant or increasing. Part of the drop in productivity is explained by new legal requirements and a changed composition of applicants.

Since 1997, Statistics Denmark has been developing productivity measurements to assess its work. The number of statistics produced is used as the output basis for productivity measurements. Labour productivity is estimated to have grown by 3.1 per cent per annum between 2002 and 2004, with total factor productivity growing by 1.2 per cent per annum over the same period. The productivity measures do not take into account a number of factors that can impact on productivity, such as changes in quality or the content of a particular statistic over time. As a consequence, Statistics Denmark excludes from the productivity calculations statistics that are influenced significantly by such changes. From 2005, a new time recording system has been introduced, which is expected to make it possible to correct the productivity measures for some of the factors that have an unintended impact.

5.3 Bottom up productivity measurement

As noted by de Walle (2005) with regard to good governance performance indicators: 'Another attempt at using objective indicators starts from a bottom-up approach: by collecting objective performance indicators on specific services'. In this case, aspects of performance are assessed from a service user perspective, to see how efficiently a service is provided.

The World Bank uses this approach in some contexts, in particular with regard to the assessment of the effects of regulation. For example, the steps and costs associated with starting a business are assessed and the results compared over time and across countries. All generic procedures that are officially required for an entrepreneur to start up and operate an industrial or commercial business are recorded. These include obtaining all necessary licenses and permits and completing any required notifications, verifications or inscriptions with relevant authorities. Local incorporation lawyers and government officials complete and verify the data. The key indicators used to assess performance are the number of procedures the applicant is required to go through, the

number of days each procedure takes, and the cost of start up (The World Bank Group, 2006). The results for Ireland for 2005 are given in Table 5.1 as an illustrative example.

Table 5.1: Starting a business in Ireland

This table summarises the procedures and cost associated with setting up a business in Ireland

Nature of Procedure (2005)	Procedure	Duration (days)	US\$ Cost
The founder swears before a Commissioner for Oaths	1	1	5.63
File application with register	2	15	1,781.52
Make a company seal	3	1	22.82
Register for taxes and employment payments	4	7	0.00
Totals:	4	24	\$1,809.97

Source: The World Bank Group (2006)

Another example of this bottom up approach to productivity measurement is a study of the institutional performance of regional governments in Italy undertaken by Putnam (1993). In this study, one of the indicators used to assess institutional performance, and the most relevant from the point of view of productivity, is bureaucratic responsiveness. Bureaucracies in each region were approached with mail requests for information about three specific (but fictitious) problems:

- The health department was asked about reimbursement procedures for a medical bill incurred while the inquirer was on vacation abroad.
- The vocational education department was asked about job training facilities for a 'brother' just finishing junior high school.
- The agriculture department was asked, on behalf of a

‘farmer friend’, for information about loans and subsidies for experimental crops.

Replies were evaluated for promptness, clarity and comprehensiveness. If no reply was received, follow up telephone calls and subsequent personal visits were made. Information was brought together in a composite index of the responsiveness of the three agencies examined, comparable across twenty regions.

Similarly, the Department of Enterprise, Trade and Employment, as part of its work on customer care research, has conducted mystery shopping surveys where queries on aspects of the department's work are put over the phone to the relevant division. Examples of the kind of question asked are ‘what are the maximum hours that people under eighteen are permitted to work?’ and ‘how are annual holidays calculated?’ Both the timeliness and quality of reply to these and other scenarios are assessed. It would be possible to repeat such surveys and track changes over time.

5.4 Conclusions

Organisation level productivity measurement is likely to be a feasible and useful tool for those organisations that have clear, identifiable outputs that can be linked to inputs used. These measures do not necessarily need to cover the whole organisation, and may be indicators of productivity for discrete parts of the organisation. There are many organisations, and parts of organisations, where the development of such measures is not feasible, particularly with regard to policy work. But this does not preclude developments for the large parts of the public sector where measurement development is possible.

The bottom up/service user measurements examined here are not productivity measurements in the strict sense, as they are focused on the outputs and broad performance of public sector organisations rather than linking this data to inputs in a direct manner. However, as outlined in section 2.1, such measures do help provide a picture of what value is being delivered by public services in return for

the expenditure supports provided. As such, they have a potentially important role to play in productivity measurement in its broad sense. Bottom up measures can also be a helpful source of information to provide triangulation data for more conventional productivity studies.

Conclusions and recommendations - a framework for the development of public sector productivity measurement in Ireland

6.1 Introduction

The measurement of public sector productivity is clearly a challenging task. While there is a diversity of international experience to learn from, no simple solution to measuring public sector productivity has been found. In particular, the idea of deriving a single measure of productivity for the nation, a sector or an organisation is unrealistic. Any productivity measures developed need to be interpreted cautiously and combined with other information on performance to give a fuller picture.

For statistical and national accounts purposes, the input/output ratio should inform the development of productivity measures. But more generally, a broad definition of productivity should be used in determining productivity in the public sector. The focus should be on the value received from the services provided through public funding, including the outcomes achieved.

6.2 Creating a framework for developing public sector productivity measurement in Ireland

Information on public sector productivity in Ireland is limited. In order to develop a broad range of information on productivity and not rely on single data sources, a framework for the development of productivity measurement is outlined in Table 6.1. This framework proposes that action be taken at a number of levels – cross-national, national and sectoral, and organisation-based and bottom up - to develop information on public sector productivity in Ireland. In this way, a diversity of approaches to productivity measurement can be used to provide a broad picture of productivity developments. The framework draws from lessons learned from the international experience as outlined in this study.

Table 6.1 A framework for the development of public sector productivity measurement in Ireland

Productivity initiative	Action required
Cross-national comparative studies	<ul style="list-style-type: none"> • Track Ireland’s comparative performance in periodic studies of public sector performance and efficiency such as the World Bank and European Central Bank studies. • Actively participate in and encourage the OECD <i>Management in Government: Comparative Country Data</i> initiative.
National and sectoral initiatives	<ul style="list-style-type: none"> • The Central Statistics Office should take a lead role in the development of the measurement of government output and subsequent productivity studies. • Annual output statements being developed by government departments should inform productivity studies. • The health and education sectors should be priorities for productivity studies. • Relevant state bodies and academic institutions should be encouraged to undertake research into public sector productivity measurement. • Benchmarking of comparable organisations should take place.
Organisation-based and bottom up initiatives	<ul style="list-style-type: none"> • Organisation-based measures of productivity should be developed, using annual output statements as a basis for this work. • Central agencies should sponsor a number of service user based studies of the efficiency of public service provision across a range of sectors, repeated periodically. • Benchmarking with comparable organisations should be encouraged.

6.2.1 Cross-national comparative studies

There are a small number of cross-national studies of public sector efficiency and performance. These studies have methodological limitations, but nevertheless provide some basis for discussion on productivity. Ireland is included in these studies, which provide an opportunity for contrasting Irish experience with that of other countries. It is suggested that:

- Ireland's comparative performance is tracked in studies such as the World Bank, European Central Bank and Netherlands Social and Cultural Planning Office studies. Examination of common trends and differences across the studies may highlight issues for further attention.
- The Irish government should actively participate in and encourage the OECD *Management in Government: Comparative Country Data* project. This project provides an opportunity to develop performance and productivity measures which can be tracked over time and across all OECD countries.

6.2.2 National and sectoral initiatives

Cross-national comparative studies, while of interest, are likely to be restricted in the amount of information they provide on productivity. High levels of aggregation, and differences in national practices and definitions mean that they are of limited value. National and sectoral trends over time provide a more robust foundation for productivity measurement. It is suggested that:

- The Central Statistics Office should take a lead role in the measurement of government output and subsequent productivity studies. The Eurostat directive (see section 1.1) suggests a key role for national statistics offices in public sector output measurement. Productivity studies are a natural follow on once output measures are in place.
- Annual output statements should be developed by

government departments and should inform productivity studies. In Budget 2006, the Minister for Finance announced that from 2007 individual ministers must publish an annual statement on the outputs and objectives of their departments, and from 2008 the actual outturns, for presentation to the relevant Oireachtas committee. In this context, the Taoiseach has indicated that he wishes to see aggregate indicators developed that show the impact of total public spending (Ahern, 2006).

- The health and education sectors should be priorities for productivity studies. Health and education are major components of public expenditure. There are also several studies of productivity in the health and education sectors in other countries to draw on.
- Relevant state bodies and academic institutions should be encouraged to undertake research into public sector productivity. In particular, adjusting output figures to reflect quality changes is an important topic for detailed consideration. Bodies such as the Economic and Social Research Institute and Forfás with a track record in productivity and performance issues are well placed to undertake or coordinate such work.
- Where institutions provide similar services (local government, hospitals etc), benchmarking of performance should be encouraged. This is in line with a call to improve productivity in the public sector by de Buitléir (2006).

6.2.3 Organisation-based and bottom up initiatives

Sectoral, national and cross-national studies of productivity are important in providing a macro-level overview. But it is also important that public sector productivity is assessed at an organisational level. Moreover, getting a service user perspective of public sector efficiency at the micro level can further our understanding of productivity in its broader sense. It is suggested that:

- Organisation-based measures of productivity should be developed. For government departments, such organisation level measures should link in with and make use of the output statements to be produced from 2007 as part of the reforms of the budgetary process outlined in *Budget 2006* (Department of Finance, 2005).
- Central agencies should sponsor a number of service user based studies of the efficiency of public service provision across a range of sectors. These studies should be repeated periodically to assess change over time.
- As at the national and sectoral level, benchmarking of performance with comparable organisations has a role to play. Organisations should be encouraged to identify appropriate benchmark organisations when assessing their efficiency. The Taoiseach (Ahern, 2006) has indicated that he wishes to examine how Irish public services perform relative to their international peers, identifying how we compare with those who are recognised as representing good practice.

6.3 Conclusion

The productivity of the public sector is as important to the economic performance of a country as the productivity of the private sector. Thornhill (2006) identifies three main reasons why public sector productivity is important. First, the public sector is a major employer. Second, the public sector is a major provider of services in the economy, particularly business services (affecting costs of inputs) and social services (affecting labour quality). Third, the public sector is a consumer of tax resources. Changes in public sector productivity can have significant implications for the economy.

But measuring public sector productivity presents major challenges. Until recently, the convention in national accounts because of the measurement difficulties was to assume that outputs equalled inputs, and that therefore year on year there was no productivity change taking place in the public sector. Clearly this is not the case, and

attempts are now being made in several countries to develop productivity measures based on government output data. This paper has examined some of the main initiatives in public sector productivity measurement that are taking place internationally. On the basis of these developments, proposals are made to improve productivity measurement in the Irish public sector. There is a strong case for devoting more attention and resources to improving the measurement of public sector productivity.

Annex 1

Listing of sources and concepts included in the World Bank Government Effectiveness indicator

<i>Representative Sources</i>	<i>Concept Measured</i>
Columbia University State Capacity Survey	<p>Rate the administrative and technical skills of the country's civil service (occupying middle and higher management roles).</p> <p>Rate the efficiency of the country's national bureaucracies overall.</p> <p>Rate the efficiency of the country's local-level government bureaucracies overall.</p> <p>Rate the effectiveness of coordination between the central government and local-level government organisations.</p> <p>Rate the state's ability to formulate and implement national policy initiatives.</p> <p>Rate the state's effectiveness at collecting taxes or other forms of government revenue.</p> <p>Does the central government produce a national budget in a timely manner?</p> <p>Do local governments produce budgets in a timely manner?</p> <p>Rate the state's ability to monitor socioeconomic trends, activities, and conditions within its borders.</p> <p>Rate the state's ability to create, deliver, and maintain vital national infrastructure.</p> <p>Rate the state's ability to respond effectively to natural disasters.</p>
Global Insight	<p><i>Government instability:</i> An increase in government personnel turnover rate at senior levels that reduces the GDP growth rate by 2% during any 12-month period.</p> <p><i>Government ineffectiveness:</i> A decline in government personnel quality at any level that reduces the GDP growth rate by 1% during any 12-month period.</p>

Institutional failure: A deterioration of government capacity to cope with national problems as a result of institutional rigidity that reduces the GDP growth rate by 1% during any 12-month period.

Economist Intelligence Unit	Quality of bureaucracy Excessive bureaucracy / red tape
World Economic Forum	Public spending composition Quality of general infrastructure Quality of public schools Time spent by senior management dealing with government officials
Merchant International Group	<i>Bureaucracy.</i> The critical feature of bureaucracy is that it raises issues more complicated than 'red tape' alone. Bureaucracy can be actively and deliberately obstructive to foreign investors – in response to political pressures, vested interests and special interest lobbies. Some features that determine the extent that bureaucracy could affect business operations are the accountability of public officials; politicisation of bureaucratic departments; regulatory credibility and enforceability; size of the public sector and transparency of decision making.
Political Risk Services	<i>Government Stability.</i> Measures the government's ability to carry out its declared programmes, and its ability to stay in office. This will depend on issues such as: the type of governance, the cohesion of the government and governing party or parties, the closeness of the next election, the government's command of the legislature, and popular approval of government policies. <i>Bureaucratic Quality.</i> Measures institutional strength and quality of the civil service, assesses how much strength and expertise bureaucrats have and how able they are to manage political alternations without drastic interruptions in government services, or policy changes. Good performers have somewhat autonomous bureaucracies, free from political pressures, and an established mechanism for recruitment and training.

World Markets Online *Policy consistency and forward planning:* How confident businesses can be of the continuity of economic policy stance – whether a change of government will entail major policy disruption, and whether the current government has pursued a coherent strategy. This factor also looks at the extent to which policy making is far-sighted, or conversely aimed at short-term economic (and electoral) advantage.

Bureaucracy: An assessment of the quality of the country's bureaucracy. The better the bureaucracy the quicker decisions are made and the more easily foreign investors can go about their business.

Non-representative Sources

Concept Measured

African Development Bank	Management of public debt Policies to improve efficiency of public sector Revenue mobilisation
Afrobarometer	Budget management What proportion of the country's problems do you think the government can solve? Based on your experiences, how easy or difficult is it to obtain household services (like piped water, electricity or telephone)? Based on your experiences, how easy or difficult is it to obtain an identity document (such as birth certificate, driver's licence or passport)?
United Nations Economic Commission for Africa	Executive's effectiveness Effectiveness of state structure Government services efficiency Decentralisation of structures Economic management
Asian Development Bank	Civil service Revenue mobilisation and budget management Management and efficiency of public expenditures
Business Environment and Enterprise	How problematic are telecommunications for the growth of your business? How problematic is electricity for the growth of your

Performance Survey	business? How problematic is transportation for the growth of your business?
Business Environment Risk Intelligence	Bureaucratic delays
Bertelsmann Foundation	Consensus building Governance capability Effective use of resources Reliable pursuit of goals Welfare regime
Country Policy and Institutional Assessment	Management of external debt Management of development programs Quality public administration Revenue mobilisation Budget management
Global E-Government	Global E-government
Freedom House	<i>Government and Administration:</i> Government decentralisation, independence and responsibilities of local and regional governments, and legislative and executive transparency are discussed
Latinobarometro	Trust in government
Institute for Management Development	Government economic policies do not adapt quickly to changes in the economy The public service is not independent from political interference Government decisions are not effectively implemented Bureaucracy hinders business activity The distribution infrastructure of goods and services is generally inefficient Policy direction is not consistent

Source: Kaufmann. Kraay and Mastruzzi, 2005

Annex 2

Examples of output indicators in the central government in Finland

Consumer Ombudsman's Office

- number of petitions to market court
- marketing instructions
- (number of) contractual terms negotiated
- statements on legislative initiatives
- cases solved individually
- replies to written inquiries

Courts such as The Supreme Court, Courts of Appeal, District Courts, Provincial Courts and Supreme Administration Court

- number of cases settled

Helsinki City Police Department

- the output indicators of public order and security, such as activities directed toward the protection of property and the individual
- crime prevention measured by the number of crimes solved
- the final products of traffic safety
- number of permit documents issued (number of passports, identity cards, driving licences and firearms licences)

Housing Fund of Finland

- decisions about loans and interest subsidies measured as the weighted number of decisions

National Board of Patents and Registration

- number of patents
- number of utility models
- number of trademarks
- number of pattern rights
- company register cases
- association register cases
- enterprise mortgage cases

National Food Administration

- number of letters guiding supervision
- number of administrative decisions and memos
- number of publications
- number of statements
- number of training events
- new instruction materials

Prison system

- prisoner-days

Prosecutors' Offices and Distrain Offices

- number of cases dealt with

State Audit Office

- number of annual audits
- supplementary audits
- international audits
- expertise activities, statements

Tax Administration

- numbers of private persons, agricultural entrepreneurs and entrepreneurs and corporations subject to income and property tax
- number of supervised registered employers
- numbers of primary producers and entrepreneurs subject to value added tax
- the output indicator of real estate tax

Universities

- number of degrees completed (generally separated into graduate and postgraduate degrees)
- adult education and continuing education measured, for example, in days or number of courses (depending on the university)
- number of publications (research)

Source: Niemi, 1998

Annex 3

The UK Office of the Deputy Prime Minister 'basket' of cost effectiveness indicators

	2001/02		2002/03		2003/04	
	Performance ¹	Deflated by expenditure	Performance ¹	Deflated by expenditure	Performance ¹	Deflated by expenditure
Primary education	100.95	96.6	102.49	94.08	103.05	90.29
Secondary education	103.21	98.84	107.23	98.76	109.53	98.11
Children's social services	106.34	101.08	113.05	101.96	118.33	103.37
Adult's social services	105.87	99.37	110.95	97.12	117.38	94.67
Housing	104.01	104.5	108.25	108.01	113.04	111.83
Benefits	104.03	100.2	112.57	105.39	117.99	108.36
Waste management	105.74	104.99	122.99	120.91	153.86	131.05
Transport	111.09	102.9	112.16	96.91	117.06	95.91
Planning	100.58	92.37	101.2	84.31	105.45	74.48
Culture	104.76	96.91	122.43	106.59	125.26	108.07
Community safety	96.3	100.23	95.83	99.58	104.64	97.44
All services	103.9	96.6	108.14	94.08	112.54	90.29

¹ Performance as measured by the ODPM basket against a base of 100 in 2000/2001

Source: *Martin and Bovaird, 2005*

NOTES

- ¹ The Eurostat Price and Volume Handbook (2001) identifies four potential characteristics of output indicators:
1. Full coverage of all services provided to external users
 2. Cost-weighted
 3. Defined in as much detail as possible
 4. Adjusted for quality
- It also identifies A, B, and C methods for individual services:
- A methods: output indicators satisfying all four criteria
 - B methods: output indicators not satisfying all four criteria
 - C methods: methods based primarily on measuring inputs
- ² Commission decision 2002/990 outlaws the use of C methods referred to in note 1 from 2006.
- ³ It should be noted that the main interest in this chapter is in the approach taken to measuring performance and productivity rather than the findings from the studies (though reference is made to the findings in some instances). Readers interested in the findings are referred to the source documents referenced in the text.
- ⁴ The Atkinson review also suggests that this adjustment be used and interpreted cautiously pending further debate.
- ⁵ Frontier analysis is a statistical performance measurement technique used for evaluating the relative efficiency of units surveyed. A fundamental assumption behind the approach is that if a given unit (a) is capable of producing y units of output with x inputs, other units should also be able to do the same if they were to operate efficiently.

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