

# Methodology of the Monthly Index of Services

## Government and Sewage and Waste Disposal Industry Review

### Introduction

At the launch of the experimental Index of Services (IoS) in December 2000, a commitment was made to review and improve where practical, the sources and methods used to measure the service sector. This paper outlines the findings of the Government and Sewage and Refuse Disposal Industry Review.

### Summary

In December 2003, the ONS announced a review of government output and productivity by Sir Tony Atkinson<sup>1</sup>. As a result the IoS review of government has been limited and only new market output methods for education have been changed as a result of the review, these are as follows:

- to introduce private schools data broken down by day and boarding pupil numbers
- to introduce VAT deflated by the RPI for driving lessons and CSPI for adult education should be introduced for other education

Although the methodology will be changed all the way back to 1994 in the IoS system, only the open period from 2001 will be revised. The main impact of the new methodology is stronger growth in 2001.

### Scope of review

The full review has covered the following divisions:

- Public Administration and Defence (75)
- Education (80)
- Health (85)
- Sewage and Refuse Collection (90)

However, as explained above, the Atkinson Review has the responsibility for reviewing non-market output methods for the public sector. Therefore, this review has been limited to recommendations to market output methods for education. The review also concluded that the methods currently used for sewage and refuse collection are satisfactory. Hence, the remainder of this paper is confined to recommendations for education.

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<sup>1</sup> <http://www.statistics.gov.uk/pdfdir/nsr1203.pdf>

## How important is the education division?

In terms of gross value added (GVA) weights in 2001, education (SIC<sup>2</sup> Division 80) represents:

- 8.3% of the IoS
- 5.9% of Total GVA

Education is published as part of the Government and Other Services<sup>3</sup> component within the IoS.

## Methodology

### Previous methodology<sup>4</sup>

Within Division 80 there are six 4-digit SICs<sup>5</sup>, but rather than use indicators that match the industrial classification, the division is split into market and non-market output indicators. Table 1 below gives the methodology that was previously used:

**Table 1**

Output	Description	Weight in 2000 (GDP=1000)	% of division
<b>Non-market</b>	Output volume indicator covering the number of pupil hours of students in the public sector and non-profit institutions serving households (incl. Higher education) Source: DfES Periodicity: Financial Annual	45.2	79%
<b>Market</b>	Input volume indicator covering the number of people employed within the market element of the education sector Source: ONS Periodicity: Quarterly	12.1	21%

### Reasons for review

The main reasons for reviewing the education industry were as follows:

- the market output methods were based upon input methods,
- private schools data on pupil numbers is available
- VAT turnover data is available for parts of the education sector

### What should we be doing?

In October 2001, Eurostat (European Union's Statistical Office) published the '[Handbook on price and volume measures in national accounts](#)'. The handbook provides guidance by

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<sup>2</sup> The SIC is the Standard Industrial Classification, and this is the classification system used in the UK to define industrial groupings. The 4-digit refers to the level of detail and is generally the level at which data is collected and aggregated from within GDP(O) and IoS. More detail on this can be found in the IoS Methodology documentation

<sup>3</sup> This covers the following sections of the UK SIC: L Public Administration and Defence; Compulsory Social Security, M Education, N Health and Social Work, O Other Community, Social and Personal Service Activities, P Private Households Employing Domestic Staff and Undifferentiated Production Activities of Households for Own Use

<sup>4</sup> In this report, the previous methodology refers to the methodology used prior to Blue Book 2004, and the new methodology to the methodology taken on at Blue Book 2004

<sup>5</sup> See Annex 1 for a breakdown of the SIC - for more information see <http://www.statistics.gov.uk/sic2003>

product, on what price and volume methods should ideally be used (A methods), are acceptable methods (B methods) and those methods that should not be used (C methods). The handbook has been written in the context of annual data but the same rules apply to sub-annual data.

For non-market output, since prices are not available, the only A method for non-market output is to use "pupil hours" adjusted for quality as appropriate. The B method is to use pupil hours in the required level of detail without an adjustment for quality. Use of numbers of pupils as a proxy for pupil hours is acceptable for these methods if it can be shown that the amount of hours that pupils spent in being taught is sufficiently stable. It is encouraged for tertiary education and distance-learning.

For market output, an A method is deflating output by suitable PPIs for each type of education service (quality adjusted), and B methods could use appropriate CPIs, corrected to valuation in basic prices and reflecting the quality of the service provided. It is also acceptable to use the A and B output indicator methods described below for non-market services. Any input-based method would be considered a C method.

## **Issues faced by the industry review**

For market services in education, three key issues were identified:

- Private schools were currently being measured using an input method
- Should turnover data be used for the rest of market services?
- If so, what prices are available for deflating turnover?

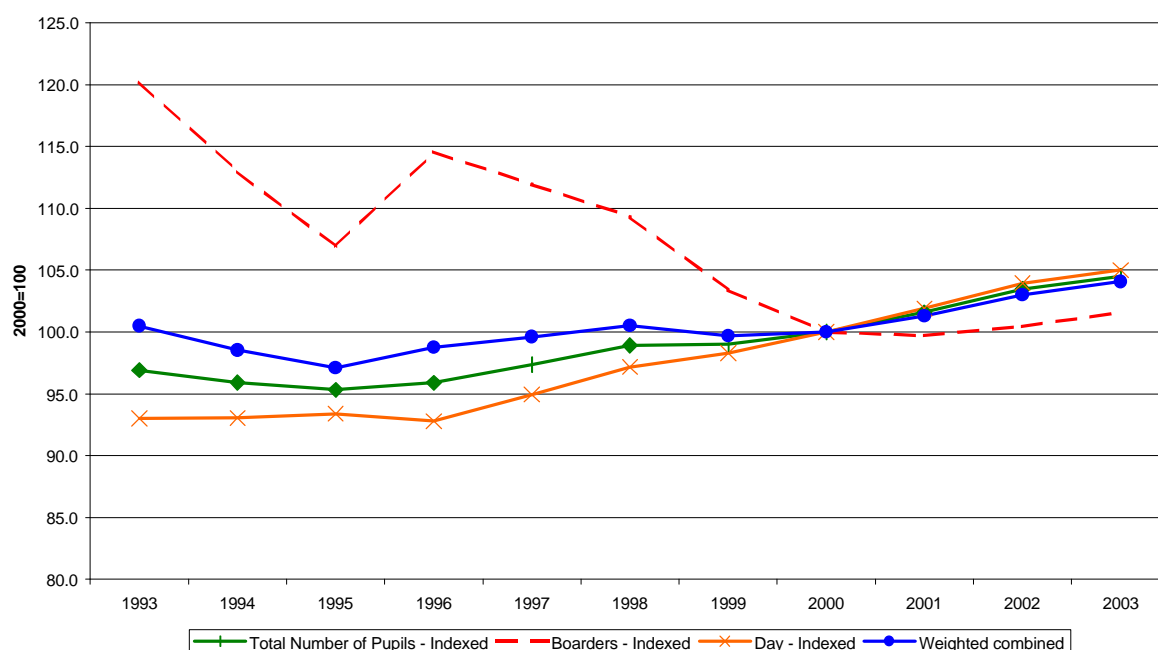
### **Private schools**

Annual data on pupil numbers at private schools are available from the Independent Schools Council Information Services (ISCIS). Although data on pupil hours is not available, pupil numbers is an acceptable methodology and would bring it more in line with the non-market methodology.

The data has been split out into day pupils and boarders as they are heterogeneous products that are priced differently. A comparison of the data shows that the two series have moved differently over time, the graph below illustrates.

**Figure 1**

**Breakdown of private schools data into boarders and day pupils**



Source: Independent Schools Council Information Service: Annual Census 2003

The graph shows that over time the number of boarding pupils has diminished, whereas day pupils has seen a steady increase. By weighting the two components together using their revenue in the base year you can derive the weighted series shown above.

When compared with non-market output it shows a similar steady path. The fact that it is only annual data is not a significant issue given the nature of schooling. The review recommends the introduction of this data for private education.

### Recommendation:

#### **1. Introduce private schools data broken down by day and boarding pupil numbers**

##### **Other education**

This component covers driving schools and other adult education (such as private training providers). Although the ONS turnover data survey MIDSS is not currently collected in this division, VAT turnover data is available. Following a review of it's quality it was deemed of usable quality.

Although driving schools are included the group is dominated by other adult education (97% of the group according to the ABI<sup>6</sup>). As well as turnover, good quality deflators are also available.

<sup>6</sup> See [http://www.statistics.gov.uk/abi/downloads/section\\_m.xls](http://www.statistics.gov.uk/abi/downloads/section_m.xls) for ABI data for this division

The Retail Price Index includes a driving lessons series, which shows steady growth in keeping with what you would expect in this industry (i.e. lesson prices largely dictated by wages). A CSPI is also available for adult education. This covers all of the main products produced by this group and has good coverage of the industry.

The review recommended that this deflated VAT series be introduced as it represents a big conceptual improvement over the current methodology.

**2. VAT deflated by the RPI for driving lessons and CSPI for adult education should be introduced for other education**

**Who was consulted as part of the Industry Review process?**

Within the ONS, there was comprehensive consultation with relevant teams both within National Accounts and in the survey areas. In terms of external consultations we are grateful to the assistance received from the Independent Schools Council.

**New methodology**

In summary the industry review for division 80 has made the following recommendations that were implemented at Blue Book 2004:

- to introduce private schools data broken down by day and boarding pupil numbers
- to introduce VAT deflated by the RPI for driving lessons and CSPI for adult education should be introduced for other education

**Benefits and issues of new methodology**

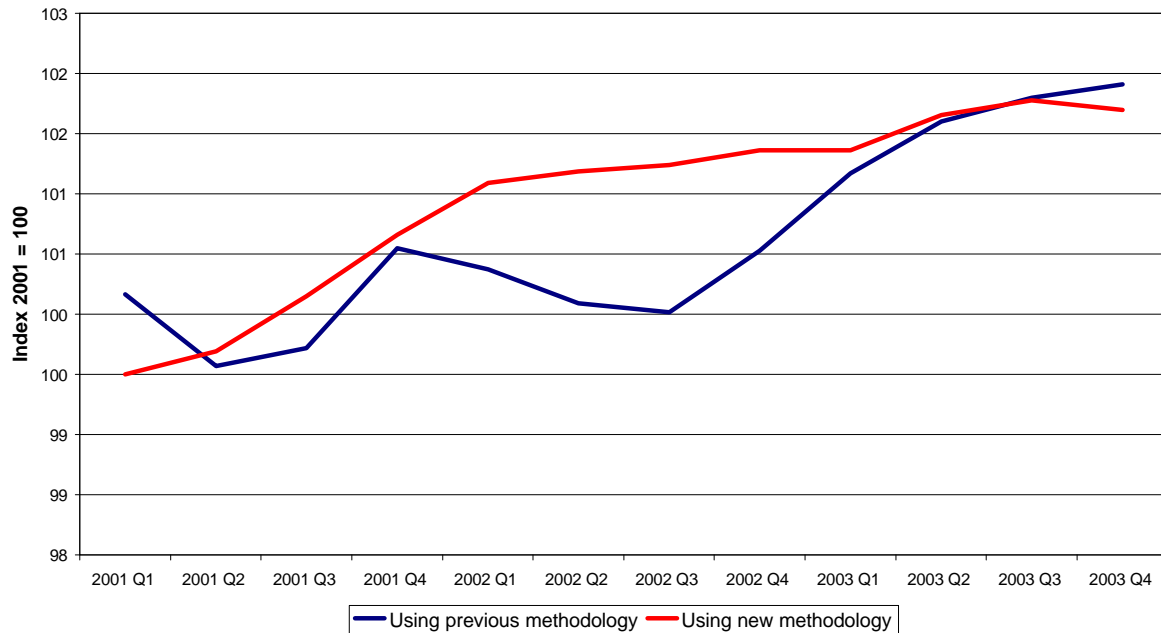
Benefits	V	Assumptions
<p>The new methods recommended measure the output directly rather than the input based methods</p> <p>This thereby improves the coverage and conceptual quality of the indicators used</p>		<p>For private schools, the methodology is assuming there is a direct link between pupil numbers and pupil hours</p> <p>For technical and vocational secondary education, the current method will remain as no viable alternative is currently available</p>

## Impact of new methodology

The graph below shows the impact of the new methodology on Division 80. The data has been revised back to January 2001. This in line with the open period for revisions set-out in the National Accounts Revisions Policy for Blue Book 2004.

Figure 2

### Education (SIC92 division 80) constant prices seasonally adjusted



## Contact Information

Any questions or comments on this article are welcome, as are offers to participate in the process of improving industry sources and methods. Any enquiries should be addressed to:

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## Annex

### SIC Breakdown of Division 80

SIC	Description
80.10	Primary education
80.21	General secondary education
80.22	Technical and vocational education
80.30	Higher education
80.41	Driving school activities
80.42	Adult and other education not elsewhere classified

### Comparison of new and old methods

Group/Class	Industry Description	Current Output Indicator	Current Deflators	New industry description	Proposed Output Indicator	Proposed Deflators	GVA weight per 1000	Weight within division
801-3	Primary, secondary and higher education	Index of output for public sector and non-profit institutions serving households (2000=100)	n/a				40.2	70%
		Non-local authority employees (GB), part-time counted as half, adjusted for changes in productivity	n/a	Other education (market)	As current		1.2	2%
		Non-local authority employees (GB), part-time counted as half, adjusted for changes in productivity	n/a	Output of private schools	Number of day pupils and boarding pupils at UK private schools (thousands)		9.5	17%
804	Adult and other education	Non-local authority employees (GB), part-time counted as half, adjusted for changes in productivity	n/a	Other adult education nec	Deflated turnover from VAT returns	RPI: Driving lessons CSP1: Adult education	6.5	11.3%

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Independent Schools Council Information Service (2003), Annual Census 2003. For more information please see: <http://www.iscis.uk.net>

For more information on the Atkinson Review please visit: <http://www.statistics.gov.uk/CCI/nugget.asp?ID=663&Pos=&ColRank=1&Rank=208>