

Adjusting industry cost indices to share productivity gains with customers

IPART's method for determining the productivity factor when using a cost index approach

Information Paper
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1 Introduction

Productivity is a measure of the efficiency of production. It is measured as the ratio of the outputs of goods or services that are produced relative to the volume of inputs (eg, labour, capital, raw materials) that are used to produce the output. An industry's productivity increases either because it has found ways to produce more or increase quality with the same inputs, or it has found ways to produce the same output with less inputs.

Productivity growth is a desirable goal for a business because it generates higher profitability, some of which may be shared with its customers and its workers. The way it is shared with customers is through lower prices.

Earlier this year IPART decided to adopt a consistent methodology for estimating productivity when setting prices using a cost index approach. We use a cost index approach in setting fares for taxis, rural and regional buses and private ferries and for setting the local government rate peg (which is used to regulate growth in council rate income). As part of this approach, we include an estimate for productivity which is incorporated into our determinations.

We have already used our new approach to set the productivity factor included in our determination on taxi fares for 2012/13. We have also used it to determine the productivity factor included in the local government rate peg for 2013/14. We will use the same approach when we set the productivity factor for rural and regional bus fares to apply from January 2013.

The purpose of this information paper is to inform stakeholders of the approach that IPART is using when determining productivity factors in these reviews.

2 Summary

Where competitive pressures are strong, we would expect that businesses have incentives to seek productivity gains and that some of these gains would be shared with customers through lower prices.

IPART regulates sectors of the economy that may not be subject to the full competitive pressures of the market. When we set prices for regulated businesses, we make an estimate of potential productivity gains that are available and deduct an amount from the prices we set.

IPART uses 2 main approaches when making price determinations:

- ▼ a 'building block approach' - which builds industry costs from the bottom up and sets prices so that efficient costs may be fully recovered, and
- ▼ a 'cost index approach' - which uses an index of input costs to measure the change in industry costs and sets prices to recover costs.

When using a building block approach, we incorporate any productivity gains made by the business into our estimates of efficient costs.

When we use a cost index approach, we take account of potential productivity changes. We estimate a productivity adjustment for the relevant industry and deduct it from the index. We do this because we consider that productivity changes in a market sector of the economy should be shared with customers.

For the last few years we have estimated a productivity adjustment or factor on an industry-by-industry basis. From 2012 we have decided to use a consistent methodology for estimating productivity which we will apply to the industry sectors we regulate using the cost index approach.

The main differences from the previous approach are that we now:

- ▼ use multifactor productivity measures rather than labour productivity
- ▼ apply the productivity factor to the whole cost index rather than just the labour component
- ▼ use a 15-year average rather than a 5-year average.

We will then consider whether there are any industry-specific factors that may require us to exercise our judgement.

3 Why do we adjust for productivity gains when setting prices?

In market-oriented sectors of the economy, the disciplines of the market, especially the pressure of competition, usually provide sufficient incentive for a business to share any potential productivity (or efficiency) improvements with consumers through lower prices.

In industries that are not subject to competitive pressures, regulation tries to replicate the outcomes of competition. By estimating productivity growth and adjusting final prices for it, we limit the increase in those regulated prices so that they do not rise as quickly as the prices paid for factor inputs.

The effect of this adjustment is to share some of the potential gains in productivity with customers. Another reason for making such an adjustment is that, in some of our pricing reviews, our terms of reference oblige us to make it.

Of course, if a business can make greater productivity gains than those incorporated into our adjustment, the business retains the benefit with resultant lower unit costs and higher returns.

4 How do we determine an appropriate productivity factor?

Until recently, we measured productivity and applied it to the industries we regulate on a case-by-case basis. In our updated approach:

- ▼ We set a benchmark productivity factor that is informed by trends in productivity throughout the Australian economy. Specifically, we use the ABS series known as multifactor productivity in the market sector¹.
- ▼ We then adjust the benchmark for relevant industry specific factors, such as
 - any recent industry-related changes in regulation or technology (ie, increased reporting requirements or enhanced computing systems)
 - historical trends in industry total costs and/or output
 - information from comparable industries
 - the size of the industry and the scope for innovation.
- ▼ Finally, we apply the productivity factor to the index of costs before setting prices.

4.1 Why can't we use other published productivity measures?

There are few direct measures of productivity for the industries that we regulate. Even where relevant information appears to be available, it is often not comparable with the specific industry segment we regulate.

For example, the Australian Bureau of Statistics (ABS) publishes industry data on productivity for the 'transport, postal and warehousing' sector, but the types of activities included within this measure are more akin to freight and logistics than to passenger transport such as rail, bus, ferry or taxi transport.

¹ The market sector includes all industries in the ANZSIC industry classification except the 3 sectors whose output is not sold. These are 'public administration and safety', 'education and training' and 'health care and social assistance'. Source: *ABS Experimental Estimates of Industry Multifactor Productivity, 2010-11*, data cube on ABS website.

Likewise, the ABS publishes productivity data for the 'public administration and safety' sector. While this industry classification relates reasonably well to the local government sector, the data does not provide a reliable measure of productivity because the output of the sector is not sold. This means that the ABS measures output as the sum of the inputs so that there is no measure of multifactor productivity for the sector.²

4.2 Multifactor productivity in the market sector

In the absence of relevant industry data, we have chosen an 'economy-wide' measure of market-sector productivity as the best available indicator of the rate of productivity growth across the Australian industry sectors that we regulate.

We have also decided to use multifactor productivity. In the past, we have used ABS data on *labour* productivity and applied it only to the labour component of the industry cost index. However, growth in output can result from capital and other factors of production as well as labour. A multifactor approach takes all the factor inputs into account before measuring productivity.

We have also extended the period over which we will smooth the productivity series to ensure that only long-term trends in productivity growth remain.

4.3 Current benchmark productivity factor

The latest year for multifactor productivity (MFP) data is 2009/10. The average annual rise in MFP over the 15 years to 2009/10 is 0.29%.³ We have rounded this estimate to 0.3% for the purpose of our reviews.

It is this result of 0.3% that informs the benchmark estimate of productivity that we use in determining an appropriate industry productivity factor this year.

5 Adjusting for relevant industry-specific factors

After calculating benchmark productivity growth in the economy, we then consider whether there are industry-specific factors that may mean that the benchmark understates or overstates the likely scope for productivity gains in the industry for which we are setting prices.

² This was explained in our December 2011 information paper *2012/13 Rate Peg*, p 12.

³ The data are in ABS Cat #5260.0.55.002 *Experimental Estimates of Industry Multifactor Productivity, Australia: Detailed Productivity Estimates*, 7 December 2011, Table 15.

As noted in section 4, the kinds of factors that inform our judgment in setting the productivity factors include:

- ▼ any recent industry-related changes in regulation or technology
- ▼ historical trends in industry total costs and/or output
- ▼ information from comparative industries
- ▼ the size of the industry and the scope for innovation.

We have already applied our updated approach to:

- ▼ estimating a productivity factor in setting taxi fares for 2012/13, and
- ▼ estimating a productivity factor to be used in setting the local government rate peg for 2013/14.

Our report on taxi fares explains how we derived and used a productivity factor in setting those fares.⁴

We explain how the productivity factor will be applied in our determination of the upcoming local government rate peg below.

We will apply our updated approach to fares for rural and regional buses to apply from January 2013.

5.1 Specific factors in local government

In 2011, we consulted local councils on how best to calculate the productivity factor and received submissions and feedback from a number of local councils and other stakeholders. Stakeholders objected to our use of a productivity factor in local government, but did not comment on the particular way we measured it.

In our rate peg decision for 2012/13, we made an adjustment to the labour cost component in the Local Government Cost Index (LGCI) for labour productivity gains as measured by the average rise in market sector labour productivity since 2006/07. This was then adjusted to 0.22% on the basis of industry-specific factors.⁵

⁴ See IPART, *2012 Review of Taxi Fares in NSW, Maximum fares from July 2012, Final Report and Recommendations*, June 2012.

⁵ The derivation was explained at length in IPART, *2012/13 Rate Peg – Information Paper*, December 2011, pp 12-14.

For the 2013/14 rate peg, we have again decided to discount the productivity factor for local government. Our decision to discount current benchmark productivity growth is based on the following considerations:

- ▼ Local governments pursue multiple objectives, thus perhaps making efficiency gains more difficult to achieve than in the market-oriented sectors.
- ▼ Local government productivity improvement may be limited by the geography and demographics of the local community. For example, facilities may be duplicated in dispersed townships. Private enterprise may choose where to operate and what to produce; local government cannot.

These considerations have led us, as a matter of judgement, to discount the benchmark productivity growth figure of 0.3% and instead adopt a productivity factor in the 2013/14 rate peg of 0.2%.

The size of the 2013/14 rate peg will be announced in early December 2012. We will calculate it by taking the annual average increase in the Local Government Cost Index in the year to September 2012, deducting the 0.2% productivity factor and also deducting 0.1% for the withdrawal of the carbon price advance that was included in the 2012/13 rate peg.⁶

6 More information

For the latest information on all IPART reports on specific industries, see our website at www.ipart.nsw.gov.au.

⁶ IPART included a carbon price advance of 0.4% in the rate peg of 3.6% set for 2012/13. The carbon price advance was included to allow councils to increase rates to reflect higher costs and prices resulting from the introduction of the carbon price from 1 July 2012. The advance was necessary because the rate peg for 2012/13 was set using a cost index that included price changes only up to the end of September 2011. The carbon price advance is being withdrawn over 2 years to prevent double counting. 0.1% is being deducted in the rate peg for 2013/14 and 0.3% is being deducted in the rate peg for 2014/15.