

Market sector productivity

Updated: 20 December 1999

This update provides details of productivity estimates for the market sector of the Australian economy as published by the Australian Bureau of Statistics (ABS Cat. No. 4204.0)

Productivity growth over the final year and the long term

The long-term average rate of productivity growth is 1.0 per cent a year (1964-65 to 1998-99) in the new estimates, compared with 1.4 per cent a year (1964-65 to 1997-98) in the old estimates.

Productivity growth over the final year in the new estimates (1997-98 to 1998-99) is 1.3 per cent. This is above the long term average, but is below the average for the latest productivity cycle (1993-94 to 1998-99) of 1.7 per cent a year.

Growth accounting

Figures 1a and 1b illustrate the effect of the revisions. Output growth has remained the same, while there is more input growth under the new estimates. Estimated productivity growth is correspondingly lower. As foreshadowed in the background note ([Background](#)), the extent of the revisions becomes more prominent over time

Nevertheless, while the contribution of productivity to growth has been scaled back by the revisions, the general trends in productivity over time remain. In both old and new estimates, the pattern has been: relatively high productivity growth in the 1960s and early 1970s; a slowdown commencing in the 1970s; followed by a productivity surge in the 1990s. However, while the rate of growth in the latest cycle was clearly at a record rate in the old estimates, this is only just so in the new estimates. This mainly reflects the effects of the revisions but there would also be some minor contribution from the fact that productivity growth in the final year has been slower than in other recent years. This means that inclusion of the additional year would have reduced the average rate of growth over the latest productivity cycle.

Phases of MFP growth

Figures 2a and 2b show the MFP series on a log scale. They give a more precise picture of turning points in productivity growth. The same three-stage pattern is evident in the old and new series. The annual average rates of growth in MFP are very similar in the 1960s and 1970s (1.9 per cent a year in the old and 1.7 per cent a year in the new). However, the slowdown in MFP growth from 1978-79 has been greater according to the new estimates (revised from 0.9 to 0.4 per cent a year). The surge in Australia's productivity from around 1990-91 is still strongly evident, but is not quite as pronounced.

Trend productivity growth

Figure 3 shows the year-to-year growth in the trend MFP series calculated by the ABS. As to be expected, the new series lies beneath the old series, with a slightly wider gap opening up over time. The general pattern over time is again very similar, with the exception that growth in trend MFP slows after 1995-96 in the new series.

Productivity growth in the latest productivity cycle

Figures 4a and 4b compare productivity growth in the latest productivity cycle (from 1993-94) with previous history. The ABS revisions do not affect labour productivity — the output measure is the same and, while there appears to have been a minor revision to the labour measure, it does not affect the labour productivity estimate to the first decimal place. There is still a marked improvement in capital productivity growth in the new estimates, but it is not sufficient to place the growth in the latest cycle into the positive range. The reduction in improvement in capital productivity stems from the upward revision to capital growth which, in conjunction with the same growth in output, means capital productivity growth is revised downward. (The fact that both labour and capital productivity growth appear to be the same in the new and old historical averages, and yet MFP growth is different, is due to rounding errors.)

The strong improvement in MFP growth in the latest cycle is still evident, albeit at a lower level. The latest estimates suggest that MFP growth has grown in the latest cycle at 1.7 per cent a year, compared with an historical average of 0.9 per cent a year. The conclusion, based on the previous estimates to 1997-98, that productivity growth has doubled since 1993-94 (compared with previous history) does not quite hold in the new estimates. But it is not far off. Again, some minor allowance could also be made for the fact that slower productivity growth over the final year has reduced the average over the latest productivity cycle.

Growth path

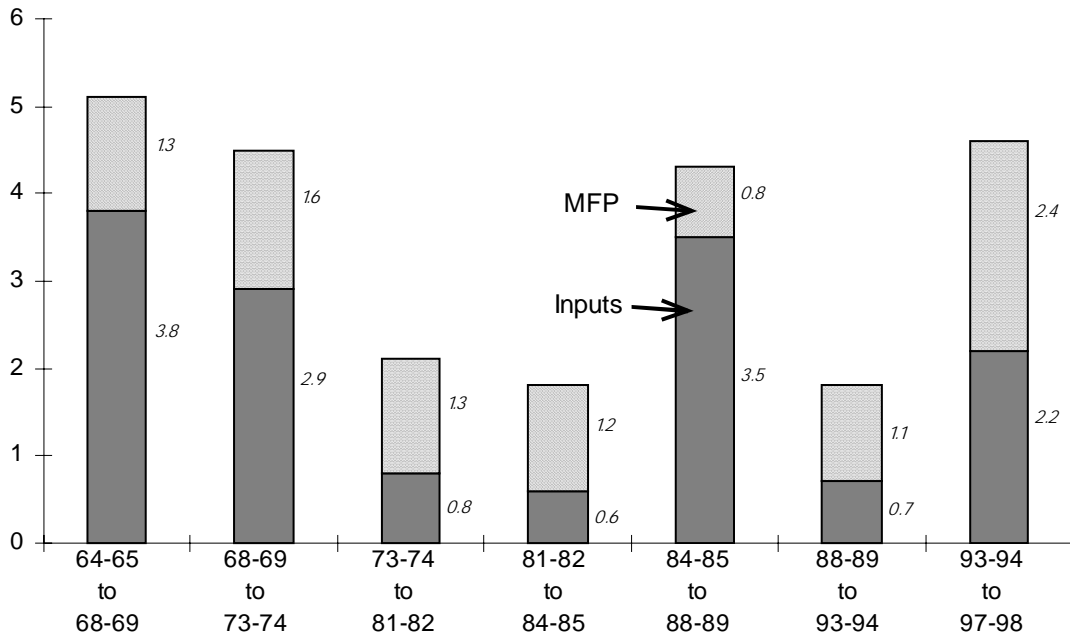
Figures 5a and 5b show Australia's growth path. They reveal a broadly similar pattern between old and new estimates. But there are differences in detail. The upward revision in capital input means that observations of the capital-labour ratio are more spread out — especially over time as the revisions have had greatest effect on revising the capital input measures upward in the 1980s and 1990s. Observations for the 1960s and 1970s are correspondingly grouped closer together.

The revisions to the capital series draw out the space between the observations for the 1990s, so that the 'pick up' in the 1990s from the extrapolation of the fitted line appears more elongated. The pattern of revisions means that the fitted line has a slightly steeper gradient, and the gap between actual and projected observations is not as great in the 1990s. Nevertheless, the increase in the actual observation over the extrapolated line is 13 per cent for 1998-99, using the new estimates, compared with 15 per cent for 1997-98, using the old estimates. Using the new estimates, the increase in 1997-98 is 11 per cent.

Figure 1a Annual average rates of growth in input, multifactor productivity and output in the market sector, 1964-65 to 1997-98

Per cent per year

OLD

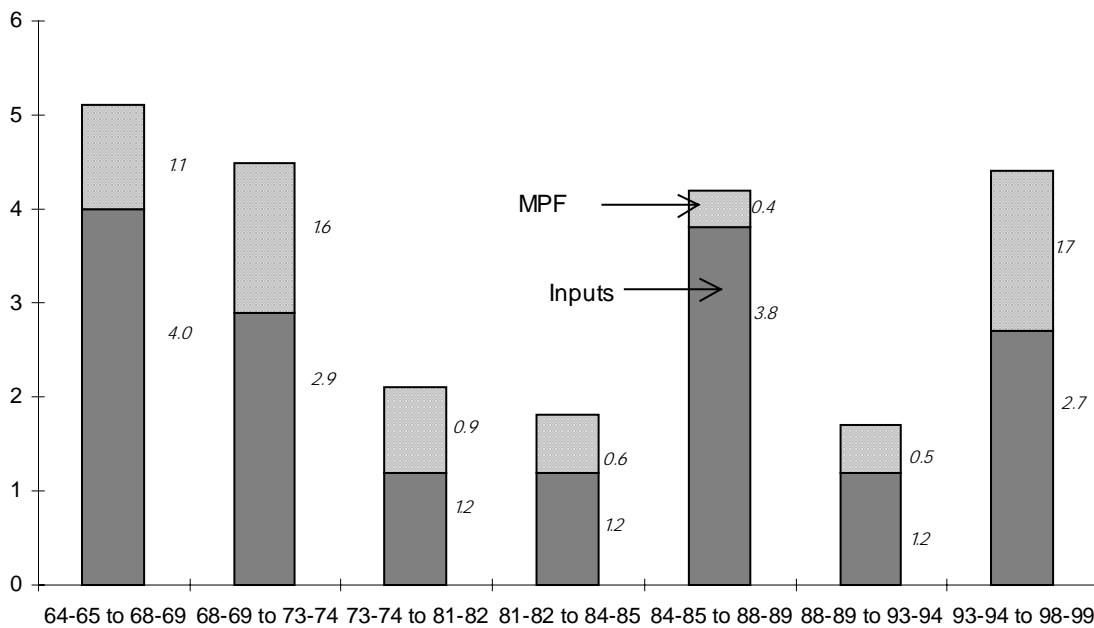


Source: PC (1999a, p.2) and PC (1999b, p. 24)

Figure 1b Annual average rates of growth in inputs, multifactor productivity and output in the market sector, 1964-65 to 1998-99

Per cent per year

NEW

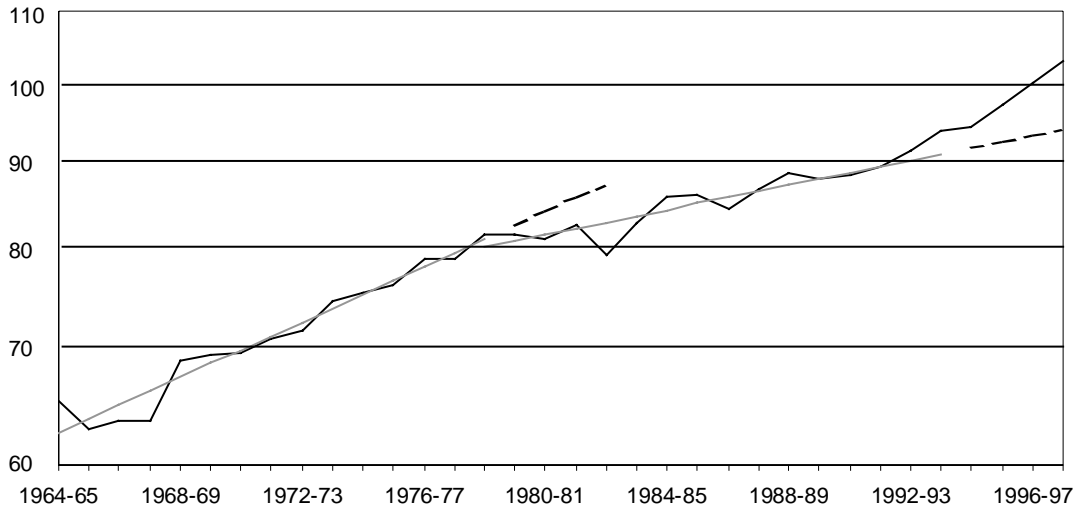


Data Source: ABS Cat. No. 5204.0.

Figure 2a Multifactor productivity in Australia's market sector^a, 1964-65 to 1997-98

Index 1996-97 = 100, log scale

OLD



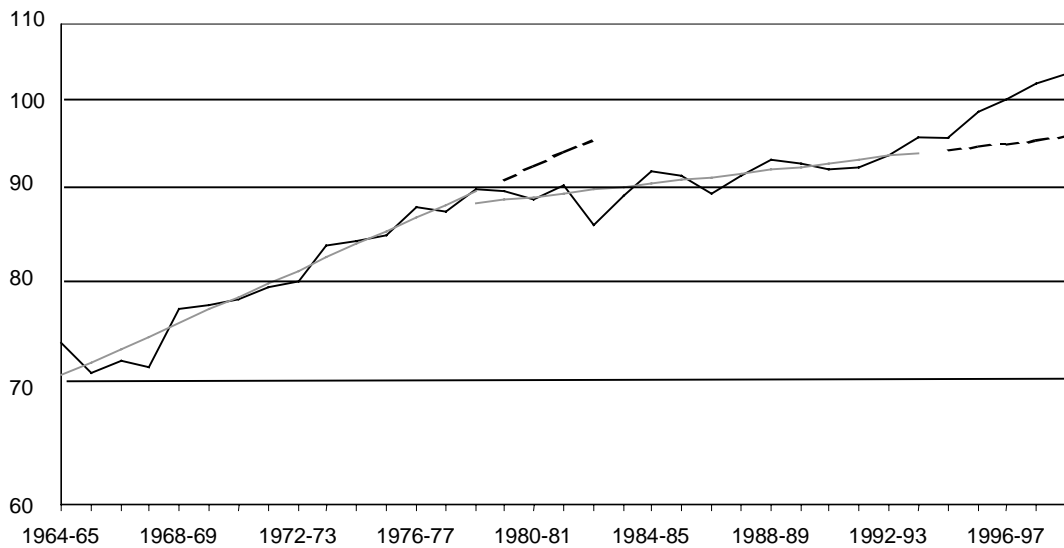
^a The log scale means that the slope of a straight line depicts an average rate of growth. The lines shown are fitted from observations from 1964-65 to 1978-79 and 1978-79 to 1993-94 and imply annual average rates of growth of 1.9 and 0.9 per cent respectively.

Source; PC (1999b, p. XVIII).

Figure 2b Multifactor productivity in Australia's market sector^a, 1964-65 to 1998-99

Index 1996-97 = 100, log scale

NEW

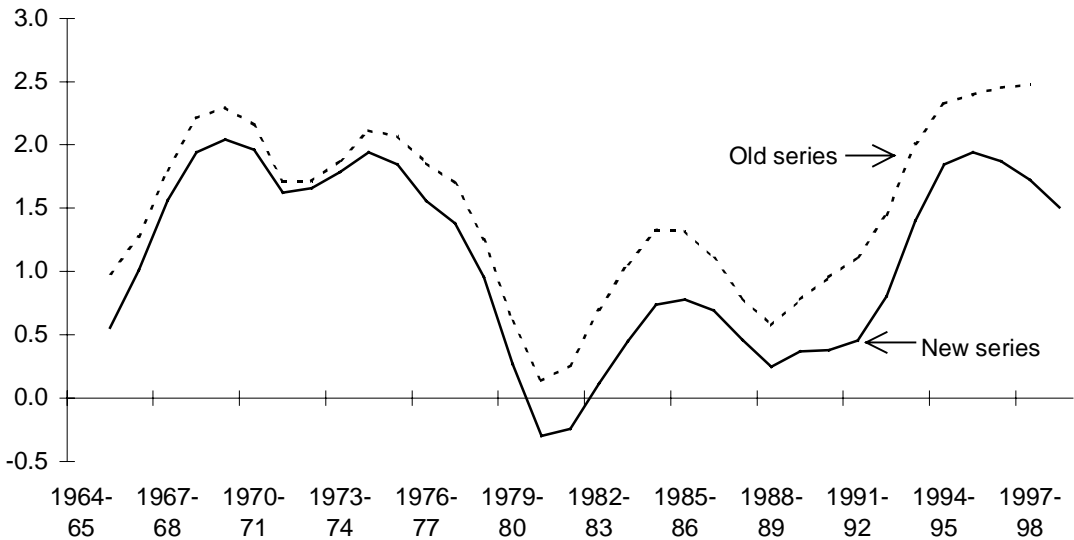


^a The log scale means that the slope of a straight line depicts an average rate of growth. The lines shown are fitted from observations from 1964-65 to 1978-79 and 1978-79 to 1993-94 and imply annual average rates of growth of 1.7 and 0.4 per cent respectively.

Data source: ABS Cat. No. 5204.0

Figure 3 Rate of growth in trend multifactor productivity in the market sector, 1965-66 to 1997-98

Per cent growth over pervious year

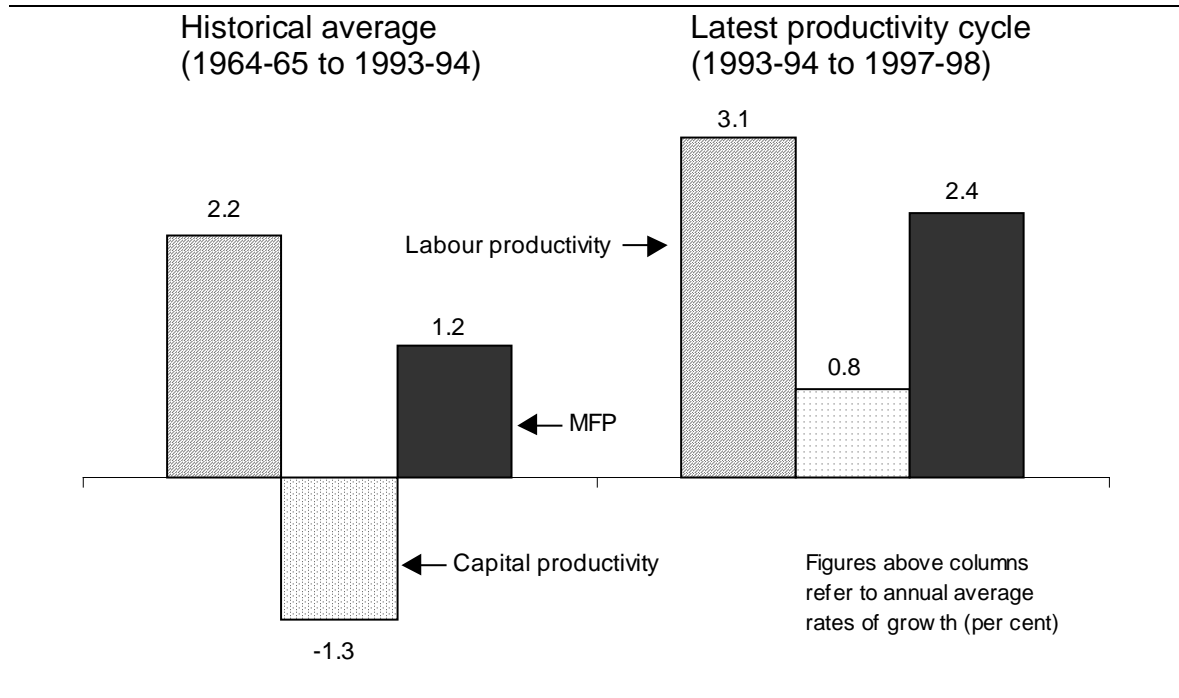


Source: Old series from PC (1999a, p. 2) and PC (1999b, p. 26). New series derived from unpublished ABS data.

Figure 4a **Average annual growth in MFP, labour productivity and capital productivity, 1964-65 to 1993-94 and 1993-94 to 1997-98**

Per cent per year

OLD

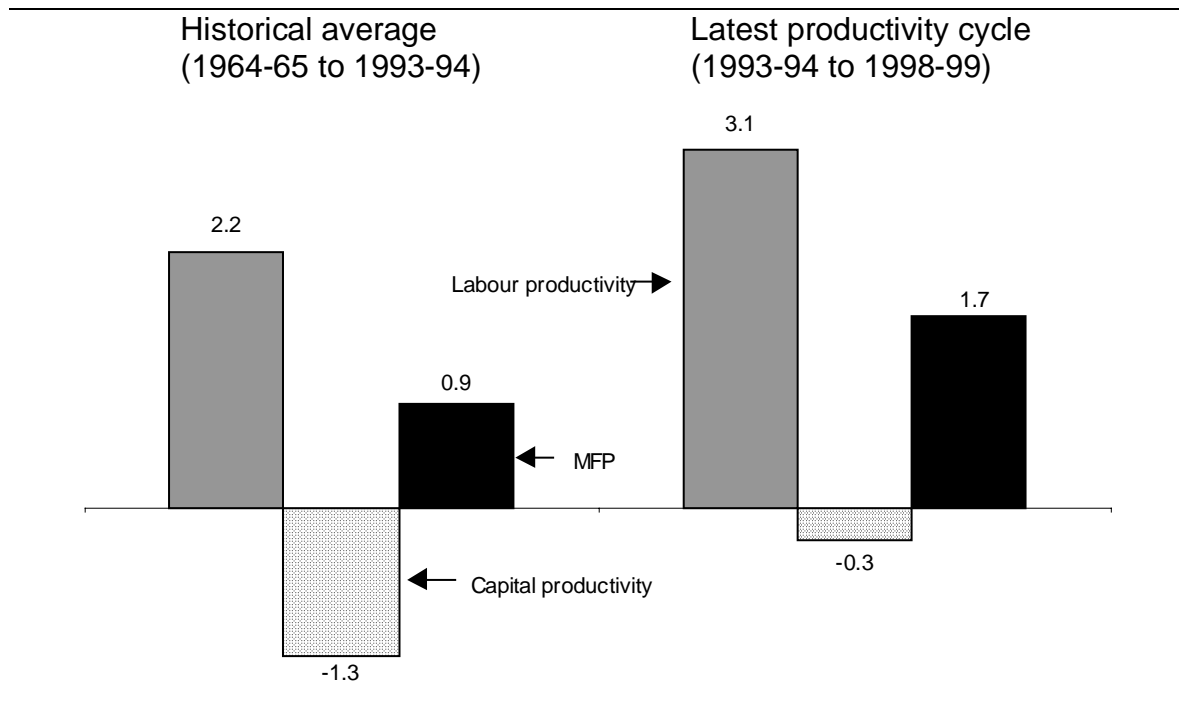


Source: PC (1999b, p. XX).

Figure 4b **Average annual growth in MFP, labour productivity and capital productivity, 1964-65 to 1993-94 and 1993-94 to 1998-99**

Per cent per year

NEW

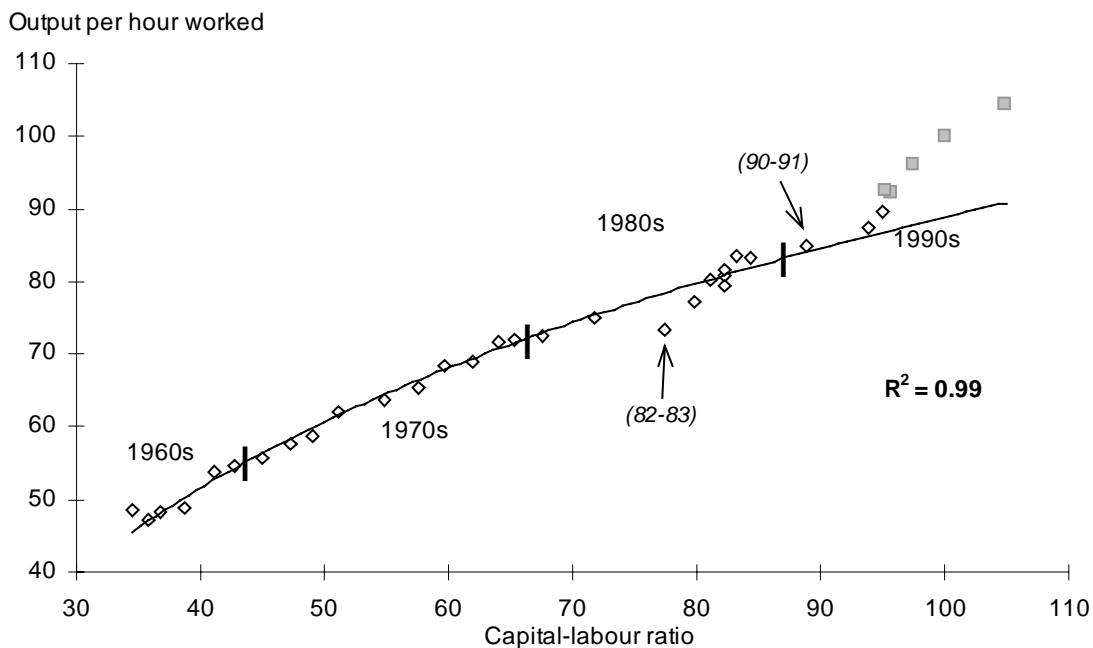


Data source: ABS Cat. No. 5204.0

Figure 5a Australia's growth path^a, 1964-65 to 1997-98

Indexes 1996-97 = 100

OLD



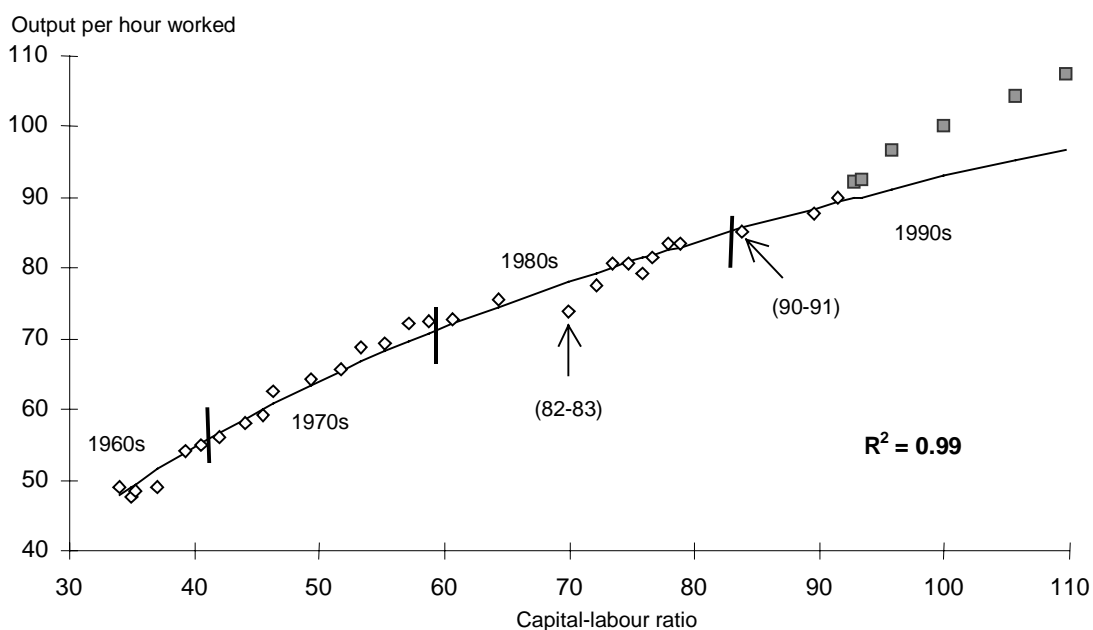
^a The fitted curve uses data for years up to 1992-93. The curve is of the form $(Y/L) = 40.66 \ln (K/L) - 98.39$. Additional observations from 1993-94 are represented as shaded squares.

Source: PC (1999b, p. 29)

Figure 5b Australia's growth path^a, 1964-65 to 1998-99

Indexes 1996-97 = 100

NEW



^a The fitted curve uses data for years up to 1992-93. The curve is of the form $(Y/L) = 41.82 \ln (K/L) - 99.64$. Additional observations from 1993-94 are represented as shaded squares.

Data source: ABS Cat. No. 5204.0.

References

PC (Productivity Commission) 1999a, *Annual Report 1998-99*, AusInfo, Canberra.

—— 1999b, *Microeconomic Reforms and Australian Productivity: Exploring the Links*, Commission Research Paper, AusInfo, Canberra.

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