

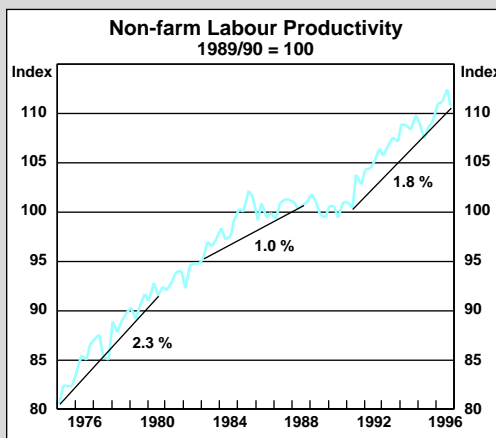
Box 2: Productivity Growth

The rate of productivity growth in the economy is the rate of growth of output that can be produced from a given amount of input of labour, capital, etc. Labour productivity growth – the rate of growth of *output per hour worked* – is also a useful concept since labour productivity growth ultimately determines the sustainable rate of growth of real wages in the economy.

Labour productivity growth tends to follow the business cycle, rising as activity strengthens and falling as it weakens. This is because, as a rule, firms in the economy take some time to adjust their level of employment in response to a change in demand for their output. When comparing labour productivity performance between economic cycles, it is therefore important to measure labour productivity over common phases of the cycle.

For the past three business cycles, an appropriate comparison is between average labour productivity growth for the 5½ years after each trough in output (the current expansion has run for 5½ years since the trough in output in June 1991). On this basis, labour productivity growth in the current expansion has been significantly stronger than in the 1980s expansion, but somewhat weaker than in the 1970s expansion (Graph 1).

Graph 1



Part of the differences in labour productivity growth between business cycles reflects differences in the rate of capital accumulation and employment growth. Labour productivity can be boosted by a rise in capital input relative to labour input. Such a boost to labour productivity can occur even if labour and capital resources are used no more efficiently than before. It is possible, using quite simple techniques, to estimate how much of the difference in labour productivity growth between business cycles is due to changes in the capital intensity of the economy and how much is due to

Table 1: Comparison of Three Business Cycles

Period ^(a)	Annual percentage growth in:				
	Labour productivity	Capital stock	Labour hours worked	Real wages	Total factor productivity ^(c)
Mar 1975–Sep 1980	2.3	3.5	0.9	2.8	1.4
Mar 1983–Sep 1988	1.0	3.1	3.6	-0.3	1.2
June 1991–Dec 1996	1.8	2.2	1.8	0.3	1.6

- (a) Each period extends for 5½ years from a trough in non-farm output.
 (b) Since real wages affect employment with a lag, real wage growth is an average for the 7½ years beginning two years before each period.
 (c) Estimated from labour productivity growth assuming a standard production function with capital and labour inputs.

improved efficiency – so-called *total factor productivity*.

The 1970s business cycle was characterised by a combination of strong growth in the capital stock, but very weak growth in hours worked; this outcome occurred largely because real wages were rising faster than labour productivity (Table 1). The 1980s cycle was also characterised by strong growth in the capital stock; growth in hours worked was also strong, however, because of moderation in real wages in that cycle. In the 1990s cycle, the capital stock is estimated to have grown more slowly than in previous cycles; hours worked, by contrast, have grown faster than in the 1970s cycle but slower than in the 1980s one, again consistent with the behaviour of real wages.

The changing capital intensity of the economy explains some of the differences in labour productivity growth between business cycles. Labour productivity growth was boosted in the 1970s cycle by rising capital intensity, but held back somewhat in the 1980s cycle as growth in hours worked outstripped growth in the capital stock.

Allowing for these changes in capital and labour inputs, total factor productivity grew at rates of 1.4 and 1.2 per cent in the first two expansions; in the 1990s expansion it is estimated to have grown at the stronger rate of 1.6 per cent.

It appears that the extensive changes in the economy over the past decade – including a structural fall in the inflation rate, productivity-enhancing changes in the labour market, corporatisation and privatisation of public-sector enterprises and substantial falls in the barriers to international trade – have led to an improvement in Australia's underlying rate of productivity growth. This higher rate of underlying productivity growth, if sustained, should enable the economy to grow at a higher average rate than was possible in the past. Raising the growth rate of the economy by 0.3 per cent (the difference between the underlying productivity growth rate in the 1990s cycle and the average of the earlier cycles) makes little difference over a year or two; over a decade or two, however, the cumulated effect on living standards is substantial. ↗