

Productivity Perspectives 2006

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Australian Government

**Department of Communications,
Information Technology and the Arts**

Forecasting Productivity Growth: 2004 to 2024

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Introduction

- The report suggests an 80 per cent probability that GDP per capita will grow at an annual rate of between 1.26 and 1.83 per cent over the forecast period. The mean prediction is 1.57 per cent. This is close to the corresponding predictions presented in Treasury (2002) and Productivity Commission (2005).
 - **The main interest in this report is on labour productivity growth defined in accordance with national accounting conventions as constant price value-added divided by total working hours. Multifactor productivity growth is also examined.**
 - The report focuses on sectoral rather than aggregate productivity forecasts. This is to highlight expected changes in technologies, a subject that is easier to analyse at the sectoral level.
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Introduction (Cntd)

- Labour productivity growth will be particularly strong in sectors that are or are becoming heavy users of ICT technologies, like telecommunications, manufacturing, finance and trade.
 - **Advances in ICT technologies in the next 20 years will mostly be in “ubiquitous” computing and communications pervading all facets of economic life.**
 - Computerised controllers will be more widely used in manufacturing, mining, construction, agricultural and transport equipment, to increase machine ‘intelligence’ and reduce labour requirements.
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Introduction (Cntd)

- The report suggests that the main sources of productivity growth will be capital deepening (that is, more capital per worker) combined with technological progress in ICT and to a lesser extent in biotechnology, nanotechnology and material science.
 - **Notwithstanding emerging economic problems related to an ageing population and environmental concerns, the continuing rapid advances in ICT and its many applications will help to improve living standards.**
 - In order to achieve the predicted productivity gains it will be necessary to support an appropriate level of investment in ICT skill formation and in ICT related R&D.
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Major Difficulties

- ❑ The effect of tumbling ICT prices on the measurement of output at the national and sectoral level
 - ❑ Uncertainties regarding greenhouse gas abatement and energy supplies
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Predicted Growth in Real GDP Per Capita: 2004 to 2024

Predictions	All-sectors annual LP growth rates	Adjustment for 4% less working hours	Final predicted annual growth rates	Increase in real GDP per capita 2004 to 2024
	%	%	%	%
Mean	1.78	1.57	1.57	36.6
Upper	2.30	2.09	1.83	43.7
Lower	1.15	0.95	1.26	28.4

Average Sectoral Predictions: Annual Growth Rates 2004 to 2024

Predictions	LP growth	MFP growth	<i>due to capital deepening</i>
	%	%	%
Agriculture	2.3	1.4	0.9
Mining	2.2	-0.4	2.6
Manufacturing	2.6	1.5	1.1
Electricity, gas, water	1.5	-0.5	2.1
Construction	1.9	1.1	0.8
Wholesale trade	1.9	1.2	0.7
Retail trade	1.7	1.1	0.6
Accommodation and restaurants	0.7	0.4	0.4

Average Sectoral Predictions: Annual Growth Rates 2004 to 2024

	LP growth	MFP growth	<i>due to capital deepening</i>
	%	%	%
Transport and storage	1.5	0.5	1.0
Communication services	6.1	2.7	3.3
Finance and insurance	2.3	0.8	1.4
Cultural and recreational	0.8	0.2	0.6
Market sector mean	2.2	1.0	1.2

Average Sectoral Predictions: Annual Growth Rates 2004 to 2024

	LP growth	MFP growth	<i>due to capital deepening</i>
	%	%	%
Property and business services	0.9		
Government services	0.0a		
Education	1.6		
Health and community services	1.4		
Personal and other services	0.8		
Imputed rent on dwellings	1.6		
All-sectors mean	1.78		

Predicted Structural Change Distribution of Employment between Sectors In terms of total working hours

	Actual 1983-84	Actual 2003-04	<i>Predicted 2023-24</i>	<i>Change 04 to 24</i>
	%	%	%	%
Agriculture	7.3	4.3	3.5	-0.8
Mining	1.7	1.3	1.4	0.1
Manufacturing	18.5	12.8	10.1	-2.7
Electricity, gas water	2.2	0.8	0.6	-0.2
Construction	7.1	9.3	8.7	-0.6
Wholesale trade	6.8	5.1	4.6	-0.5
Retail trade	12.8	12.7	11.4	-1.3

LP growth is set to zero in government services because according to national accounts conventions real output in this sector is proportional to labour inputs, hence by definition LP growth is zero.

Predicted Structural Change Distribution of Employment between Sectors In terms of total working hours

	Actual 1983-84	Actual 2003-04	<i>Predicted 2023-24</i>	<i>Change 04 to 24</i>
	%	%	%	%
Accommodation & restaurants	3.0	4.5	5.1	0.6
Transport & storage	5.6	5.2	5.7	0.5
Communication services	2.2	1.9	1.7	-0.2
Finance & insurance	3.9	3.7	4.0	0.3
Property & business services	6.3	11.8	15.0	3.2
Government services	4.7	4.3	4.3	0.0

Predicted Structural Change Distribution of Employment between Sectors In terms of total working hours

	Actual 1983-84	Actual 2003-04	<i>Predicted</i> 2023-24	<i>Change</i> 04 to 24
	%	%	%	%
Education	6.2	7.2	6.5	-0.7
Health & community services	7.2	9.0	10.6	1.6
Cultural & recreational services	1.5	2.1	2.1	0.0
Personal & other services	3.0	4.0	4.6	0.6
Total working hours	100.0	100.0	100.0	0.0