

## Appendix D: IGR 2007 projections

### D.1: Revised IGR 2007 projections summary

To facilitate comparisons with IGR 2010, the economic and aggregate fiscal projections in IGR 2007 have been revised to take into account the methodological changes to the System of National Accounts (SNA) from SNA93 to SNA08 by the ABS in December 2009.

**Table D.1: Economic and fiscal projections**

	2009-10	2019-20	2029-30	2039-40	2046-47
<b>Economic projections</b>					
Real GDP growth (%)	3.0	2.4	2.2	2.1	2.0
Real GDP per person growth (%)	1.8	1.4	1.5	1.6	1.6
Total participation rate 15+ (%)	64.9	62.7	60.0	58.1	57.1
Male					
15+	71.8	69.2	66.4	64.5	63.4
25-54	90.8	91.0	91.4	91.5	91.6
55-69	57.3	57.0	56.2	56.3	56.7
Female					
15+	58.2	56.3	53.6	51.7	50.7
25-54	76.5	77.7	78.5	78.9	78.9
55-69	38.7	39.8	39.6	39.7	40.2
<b>Fiscal projections (% of GDP)</b>					
Primary balance	1.0	0.5	-0.9	-2.4	-3.3
Net debt	-3.4	-10.4	-9.8	6.1	26.6

Source: *Intergenerational Report 2007* and ABS cat. no. 5206.0.

**Table D.2: Demographic projections**

	2010	2020	2030	2040	2047
<b>Population projections</b>					
Population (millions)	21.6	23.9	25.9	27.5	28.5
0-14	4.0	4.2	4.3	4.3	4.3
15-64	14.5	15.4	16.0	16.6	17.0
65-84	2.6	3.7	4.8	5.4	5.6
85 and over	0.4	0.5	0.8	1.3	1.6
Life expectancy at birth					
Male	79.9	82.0	83.6	85.1	86.0
Female	84.4	86.1	87.6	88.9	89.8
Total fertility rate	1.82	1.76	1.73	1.71	1.70
Dependency ratios					
Aged to working-age ratio	21.0	27.5	34.9	40.2	42.4
Child to working-age ratio	27.6	27.0	26.6	25.6	25.1
Net migration to population ratio	0.5	0.5	0.4	0.4	0.4

Source: *Intergenerational Report 2007*.

**Table D.3: Revised projections of major components of Australian government spending in IGR 2007 (per cent of GDP)<sup>(a)</sup>**

	2009-10	2019-20	2029-30	2039-40	2046-47
<b>Health</b>					
Hospitals	0.8	0.9	1.0	1.1	1.1
Medical Benefits Schedule	1.1	1.2	1.2	1.3	1.3
Pharmaceutical Benefits Scheme	0.7	1.1	1.5	2.0	2.4
Private Health Insurance	0.3	0.5	0.7	0.9	1.2
Other	0.7	0.8	0.9	1.0	1.1
<b>Total health</b>	<b>3.7</b>	<b>4.4</b>	<b>5.4</b>	<b>6.3</b>	<b>6.9</b>
<b>Aged care</b>					
Residential care	0.6	0.7	0.9	1.3	1.5
Community care	0.2	0.3	0.3	0.4	0.4
<b>Total aged care</b>	<b>0.8</b>	<b>1.0</b>	<b>1.3</b>	<b>1.7</b>	<b>1.9</b>
<b>Payments to Individuals</b>					
Aged and Service Pensions	2.6	3.0	3.5	4.0	4.2
Disability Support Pension	0.7	0.6	0.6	0.6	0.7
Family payments					
Family Tax Benefit	1.4	1.2	1.0	0.9	0.8
Child Care Benefit	0.1	0.1	0.1	0.1	0.1
Baby Bonus	0.1	0.1	0.1	0.1	0.1
Parenting Payment Single	0.4	0.3	0.3	0.3	0.3
Unemployment Allowances and					
Parenting Payment Partnered	0.7	0.7	0.6	0.5	0.5
Youth Allowance and Austudy	0.2	0.1	0.1	0.1	0.1
Carer Payment and Wife Pension	0.2	0.2	0.2	0.2	0.2
<b>Total payments to individuals</b>	<b>6.5</b>	<b>6.4</b>	<b>6.5</b>	<b>6.7</b>	<b>6.8</b>
<b>Education</b>					
Schools	0.8	0.8	0.9	0.9	0.9
Higher Education	0.6	0.6	0.6	0.6	0.6
Vocational education and training	0.2	0.2	0.2	0.2	0.2
Other	0.0	0.0	0.0	0.0	0.0
<b>Total education</b>	<b>1.8</b>	<b>1.7</b>	<b>1.7</b>	<b>1.7</b>	<b>1.7</b>
<b>Public sector superannuation(b)</b>	<b>0.4</b>	<b>0.4</b>	<b>0.3</b>	<b>0.2</b>	<b>0.2</b>
<b>Total modelled payments</b>	<b>13.1</b>	<b>13.8</b>	<b>15.2</b>	<b>16.7</b>	<b>17.5</b>
<b>Total payments(c)</b>	<b>23.9</b>	<b>24.4</b>	<b>25.8</b>	<b>27.2</b>	<b>28.1</b>

(a) The revised IGR 2007 projections are based on the new level of GDP resulting from the methodological changes to the System of National Accounts (SNA) from SNA93 to SNA08 by the ABS in December 2009.

(b) This refers to the Government's superannuation spending associated with the public sector defined benefit schemes.

(c) Total payments include GST payments but are exclusive of interest payments. Figures may not add due to rounding.

Source: *Intergenerational Report 2007* and ABS cat. no. 5206.0.

**Table D.4: Projections of major components of Australian government spending in IGR 2007 (real spending per person 2009–10 dollars)**

	2009-10	2019-20	2029-30	2039-40	2046-47
<b>Health</b>					
Hospitals	470	610	770	950	1,070
Medical Benefits Schedule	640	800	970	1,140	1,260
Pharmaceutical Benefits Scheme	380	720	1,200	1,830	2,390
Private Health Insurance	190	320	520	840	1,160
Other	420	550	710	930	1,110
<b>Total health</b>	<b>2,100</b>	<b>2,990</b>	<b>4,180</b>	<b>5,700</b>	<b>7,000</b>
<b>Aged care</b>					
Residential care	330	470	720	1,150	1,480
Community care	120	180	260	350	420
<b>Total aged care</b>	<b>450</b>	<b>650</b>	<b>980</b>	<b>1,500</b>	<b>1,900</b>
<b>Payments to Individuals</b>					
Aged and Service Pensions	1,480	1,990	2,700	3,600	4,240
Disability Support Pension	410	420	480	570	660
Family payments					
Family Tax Benefit	830	800	780	770	780
Child Care Benefit	80	80	80	70	70
Baby Bonus	60	60	60	50	50
Parenting Payment Single	220	210	250	290	320
Unemployment Allowances and					
Parenting Payment Partnered	420	480	470	460	460
Youth Allowance and Austudy	110	100	90	90	90
Carer Payment and Wife Pension	100	110	130	140	160
<b>Total payments to individuals</b>	<b>3,720</b>	<b>4,260</b>	<b>5,040</b>	<b>6,050</b>	<b>6,820</b>
<b>Education</b>					
Schools	480	560	670	790	890
Higher Education	350	380	440	500	550
Vocational education and training	130	140	170	190	220
Other	30	30	30	40	40
<b>Total education</b>	<b>980</b>	<b>1,110</b>	<b>1,300</b>	<b>1,530</b>	<b>1,700</b>
<b>Public sector superannuation(a)</b>	<b>250</b>	<b>250</b>	<b>240</b>	<b>220</b>	<b>200</b>
<b>Total modelled payments</b>	<b>7,500</b>	<b>9,300</b>	<b>11,700</b>	<b>15,000</b>	<b>17,600</b>
<b>Total payments(b)</b>	<b>13,700</b>	<b>16,300</b>	<b>19,900</b>	<b>24,500</b>	<b>28,200</b>

(a) This refers to the Government's superannuation spending associated with the public sector defined benefit schemes.

(b) Total payments include GST payments but are exclusive of interest payments.

Figures may not add due to rounding.

Source: *Intergenerational Report 2007* and ABS cat. no. 5206.0.

## **D.2: Comparisons with IGR 2007 economic and population projections**

### **Demographics**

Australia's estimated resident population in the IGR 2010 projections is 34.9 million in 2047, larger than that projected for IGR 2007 (28.5 million). This is mainly because of higher fertility, lower mortality (with correspondingly higher life expectancies) and higher net overseas migration with a slightly younger age distribution, over the next 40 years, than projected in IGR 2007. There have also been revisions in population estimates and faster population growth in 2007, 2008 and 2009 than was projected in IGR 2007.

Fertility rates have been higher since IGR 2007 than was anticipated and projected fertility rates have been raised to reflect this. In IGR 2007, the total fertility rate was projected to fall to 1.7 by 2047 while, after a small drop from the current level, the total fertility rate is held constant at exactly 1.9 from 2013 onwards in IGR 2010. Mortality rates have also been falling faster than was anticipated in IGR 2007 so life expectancy at birth is projected to be higher, especially for men.

The ABS has revised its methodology for estimating net overseas migration since IGR 2007. For IGR 2010, net overseas migration is assumed to fall relatively sharply from an average of around 244,000 a year over the three years to June 2009 to 180,000 people a year from 2012. This compares to 110,000 people a year projected in IGR 2007, which would have been around 140,000 if the new ABS methodology were available for earlier years.

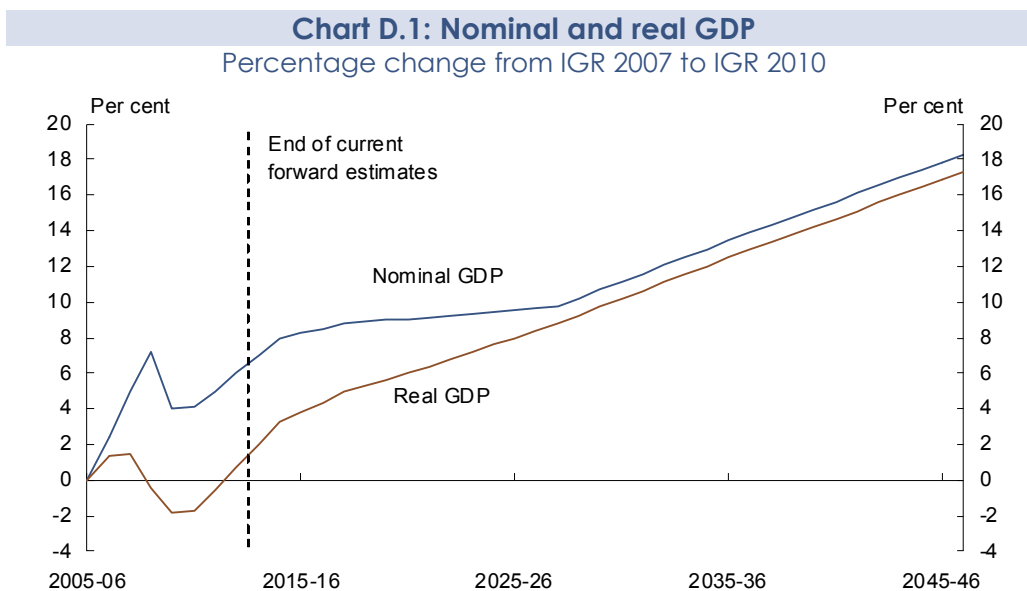
The proportion of older people in the population is smaller in IGR 2010 than in IGR 2007, but the proportion of children is larger. Overall there is a slightly higher proportion of the population of working age to support the young and those aged 65 and over in the IGR 2010 projections.

In IGR 2010, the aged-to-working-age ratio (the proportion of people aged over 65 to people of traditional working age 15 to 64) is projected to rise to over 37 per cent by 2050. This is significantly below the 42 per cent by 2047 projected in IGR 2007. Over the same period, the child-to-working-age ratio (the proportion of people aged over 65 to people of traditional working age 15 to 64) is projected to fluctuate around the current level of 28.4 per cent in IGR 2010, whereas it fell gradually to 25 per cent by 2047 in IGR 2007.

### **GDP and population**

In IGR 2010, real GDP is projected to be 17 per cent higher by 2046–47 than was projected in IGR 2007 and nominal GDP is projected to be 18 per cent higher

(Chart D.1). The higher GDP numbers are the result of differences in population, GDP per person and, in the case of nominal GDP, the GDP deflator. These are discussed in the following sections.<sup>1</sup>

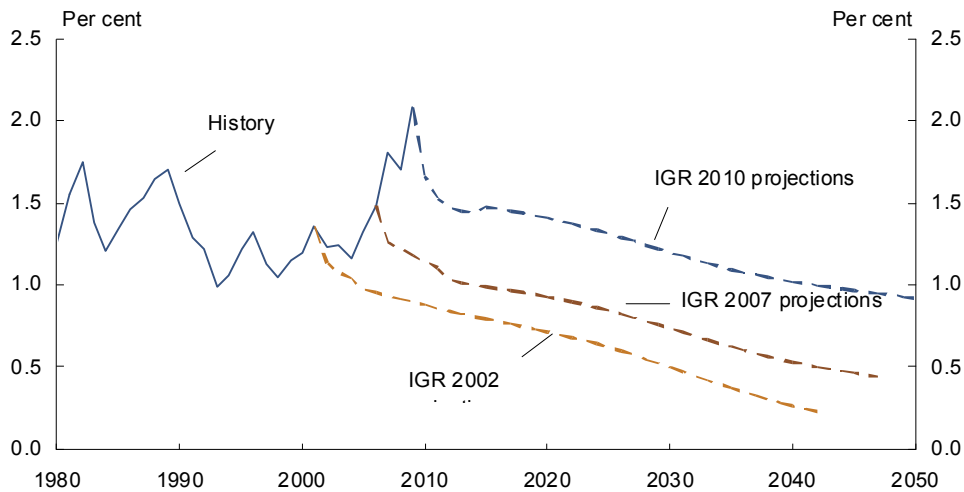


Source: ABS cat. no. 5206.0 and Treasury projections.

## Population

Differences in population growth rates are the largest single source of the differences in nominal and real GDP projections between IGR 2007 and IGR 2010. In IGR 2007, Australia's population was projected to grow to 28.5 million by June 2047, but in IGR 2010, this population projection is 34.9 million. In both the first IGR and IGR 2007, annual population growth was projected to fall steadily, to rates considerably below those in recent history. In IGR 2010, population growth still falls over time, but its annual rate is only a little below 1 per cent at the end of the projection period (Chart D.2).

<sup>1</sup> Differences between projections in IGR 2010 and those published in IGR 2007 partly reflect data revisions between the two reports. These include the move of the National Accounts to the new *System of National Accounts 2008* (SNA08) standard. The GDP comparisons in this Appendix use IGR 2007 projections adjusted for data revisions.

**Chart D.2: Annual population growth rates**

Source: ABS cat. no. 3201.0 and Treasury projections.

A small part of the difference in projected population levels — around 2½ percentage points — stems from revisions to population estimates and faster population growth between 2006 and 2009 than was projected in IGR 2007. Most of the difference, however, reflects differences over the projection period — increased fertility rates, increased migration, declines in mortality and a change in the age structure of migration.

### GDP per person

Projections of both nominal and real GDP per person over the next 40 years are lower in IGR 2010 than they were in IGR 2007 (Chart D.3).<sup>2</sup>

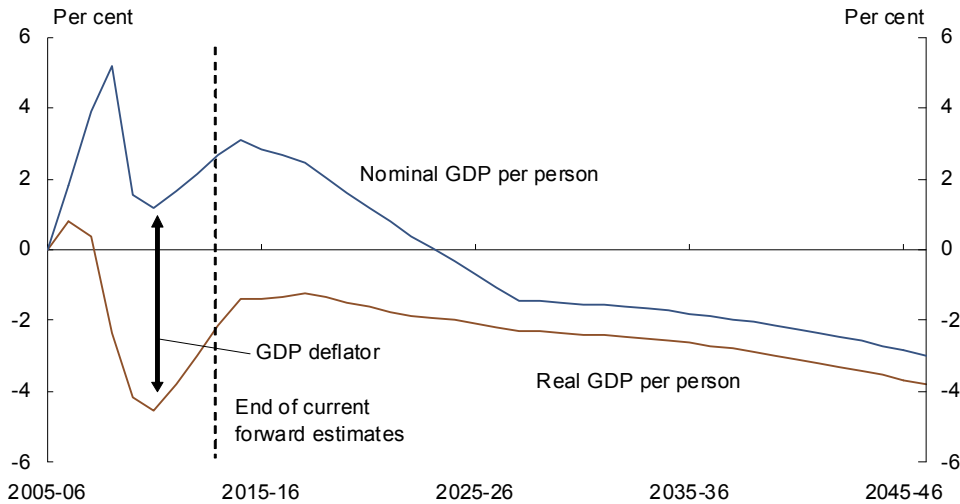
Real GDP per person falls below the levels projected in IGR 2007 over the forward estimates period and is still 1½ per cent lower by the end of the recovery period in the middle of the next decade. It is then projected to grow slightly more slowly than in IGR 2007 and be almost 4 per cent lower by 2046–47.

Differences between IGR 2007 and IGR 2010 projections of nominal GDP per person are affected by the same factors as for real GDP per person, but also reflect relative movements in the GDP deflator. These are significant over the period to the late 2020s, but are very small in later years. By 2046–47, nominal GDP per person is projected to be around 3 per cent lower than in IGR 2007.

<sup>2</sup> GDP per person comparisons use IGR 2007 projections adjusted for data revisions — see Footnote 1 above.

**Chart D.3: Nominal and real GDP per person**

Percentage change from IGR 2007 to IGR 2010



Source: ABS cat. no. 5206.0; ABS cat. no. 3201.0 and Treasury projections.

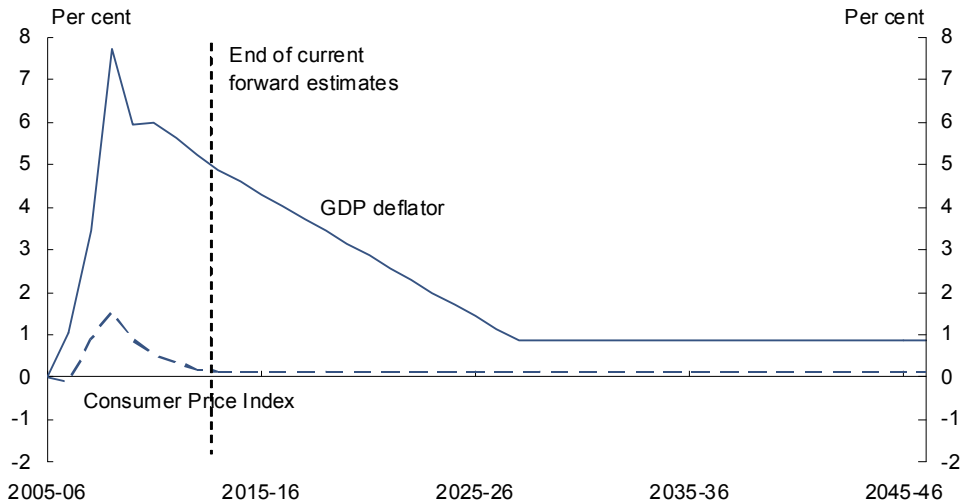
### GDP deflator

Price impacts on government expenditure depend mainly on consumer prices and nominal wages. Nominal GDP and nominal GDP per person depend on a broader set of prices, including prices of consumption goods, investment goods, dwelling construction and exports.

In 2008–09, the GDP deflator (which measures the average level of prices of the various components of GDP) was 7½ per cent higher than was projected in IGR 2007, but the difference then falls and from the mid-2020s the GDP deflator is projected to be around 1 per cent higher than in IGR 2007 (Chart D.4).

**Chart D.4: The GDP deflator and the CPI**

Percentage change from IGR 2007 to IGR 2010



Source: ABS cat. no. 5206.0; ABS cat. no. 6401.0 and Treasury projections.

The relative movements in the GDP deflator predominantly are caused by the recent boom in the terms of trade. In IGR 2007, it was projected that the strong increases in the terms of trade would be reversed partially over the three years to 2010–11, staying constant thereafter. The boom in the terms of trade was stronger and lasted longer than was projected, so that the GDP deflator was 7½ per cent higher in 2008–09. It is now projected to be around 5 per cent higher at the end of the current forward estimates in 2012–13. IGR 2010 projections factor in a decline in the terms of trade out to 2027–28, so that the GDP deflator grows more slowly over this period than in IGR 2007.

CPI growth has been much more muted than growth in the GDP deflator. From the end of the forward estimates, the CPI is projected to grow at 2½ per cent a year, the same rate as in IGR 2007.

### Real GDP per person

The level of real GDP per person is projected to be almost 4 per cent lower by 2046–47 than in IGR 2007. In the short run, differences in projections are mostly driven by labour utilisation (hours worked per person), but in the longer run, slower productivity growth is the main driver. Labour productivity is projected to be 1½ per cent lower than in IGR 2007 by the end of the forward estimates, and then to grow more slowly: at an annual rate of 1.6 per cent a year compared with 1.75 per cent in IGR 2007. Long-term productivity growth rates in IGR 2007 and IGR 2010 are based on average annual rates of growth of the previous 30 years, and the lower rate in IGR 2010 reflects lower productivity growth in the late 2000s compared to the late 1970s. Higher fertility, and to a lesser extent lower mortality, also have tended to reduce real GDP per person.

Labour utilisation is projected to be slightly stronger than in IGR 2007 by 2046–47. As explained above, changes in hours worked per person are driven by changes in age- and gender-specific participation rates and average hours, and by the impact of demographic changes on the age and gender composition of the population. These factors interact, making it difficult to identify their separate contributions to changes in hours worked per person. In broad terms, changes in assumptions about participation rates and average hours worked between IGR 2007 and IGR 2010 contribute around 1¼ per cent to hours worked per person from 2009–10 to 2046–47 and demographic changes add around 1 per cent. As a result, hours worked per person are projected to rise by around 2¼ per cent relative to IGR 2007 over this period.

### Productivity and labour utilisation

Chart D.5 shows the paths of productivity (real GDP per hour worked) and labour utilisation (hours worked per person) in recent history and their projected paths in IGR 2007 and IGR 2010. Vertical movements in the chart show changes in labour productivity. Horizontal movements show changes in labour utilisation. The lines on the chart trace out combinations of productivity and labour utilisation in successive years.

In IGR 2007 (red line), hours worked per person were projected to rise to a gentle peak towards the end of the current decade and then, once the baby-boomer generation began to retire, to fall steadily. By 2046–47, the end of the projection period in IGR 2007, hours worked per person were projected to have fallen to a level around the same as in the middle of the 1990s.

The new projections of IGR 2010 (dark blue line) have labour utilisation rising to a peak in 2014–15 after declining in 2009–10 and 2010–11 because of the economic downturn. After 2014–15, labour utilisation is projected to fall while productivity rises. In each year out to 2046–47, labour utilisation is higher than projected in IGR 2007, but productivity is lower. The improvement in labour utilisation is principally the result of higher projected participation rates for older workers and higher levels of skilled migration in IGR 2010. The slower labour productivity growth is a technical assumption based on the historical 30-year average. This is 1.6 per cent annually, compared with 1¾ per cent in IGR 2007.

**Chart D.5: Productivity and labour utilisation**



Note: Average hours worked per person are calculated across the whole population, not just those in the labour force. Real GDP per hour worked is in 2008–09 dollars.  
 Source: ABS cat. no. 5206.0 and Treasury projections.