Productivity key to raising living standards

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The Treasury's 2015 Intergenerational Report (IGR) paints a rosy picture of the future, projecting an average growth rate in real incomes per person of 1.4 per cent over the next 40 years. The report points out that by 2055, Australia's population will enjoy per capita incomes that are 75 per cent higher than they are today.

Modelling at Victoria University's Centre of Policy Studies (CoPS) is somewhat less optimistic, judging it more likely that real per capita incomes will grow at slightly below 1 per cent in the future. At this rate, incomes in 2055 will be 44 per cent higher than they are today, and it will take an additional 20 years to reach the incomes forecast by the IGR. However, growth rates far into the future are difficult to predict.

The difference in the results can be attributed to differing assumptions about productivity. While the Intergenerational Report assumes that the average productivity growth of the last 40 years should be applied to the next 40, we are more circumspect in generating the CoPS scenario. The last 40 years includes an exceptional period in Australia's economic history – a period which included the major economic reforms of the 1980's combined with unprecedented growth in computing and communications technology and the benefits of the stability brought about by a 23 year run of positive economic growth. We take the view that the productivity performance in the best of these years – 1994 until 2004 – should be discounted when considering the possibilities for the long term future. Following this logic, we find that the contribution of productivity to economic growth will be about half the size of the contribution foreshadowed by the IGR (Figure 1).

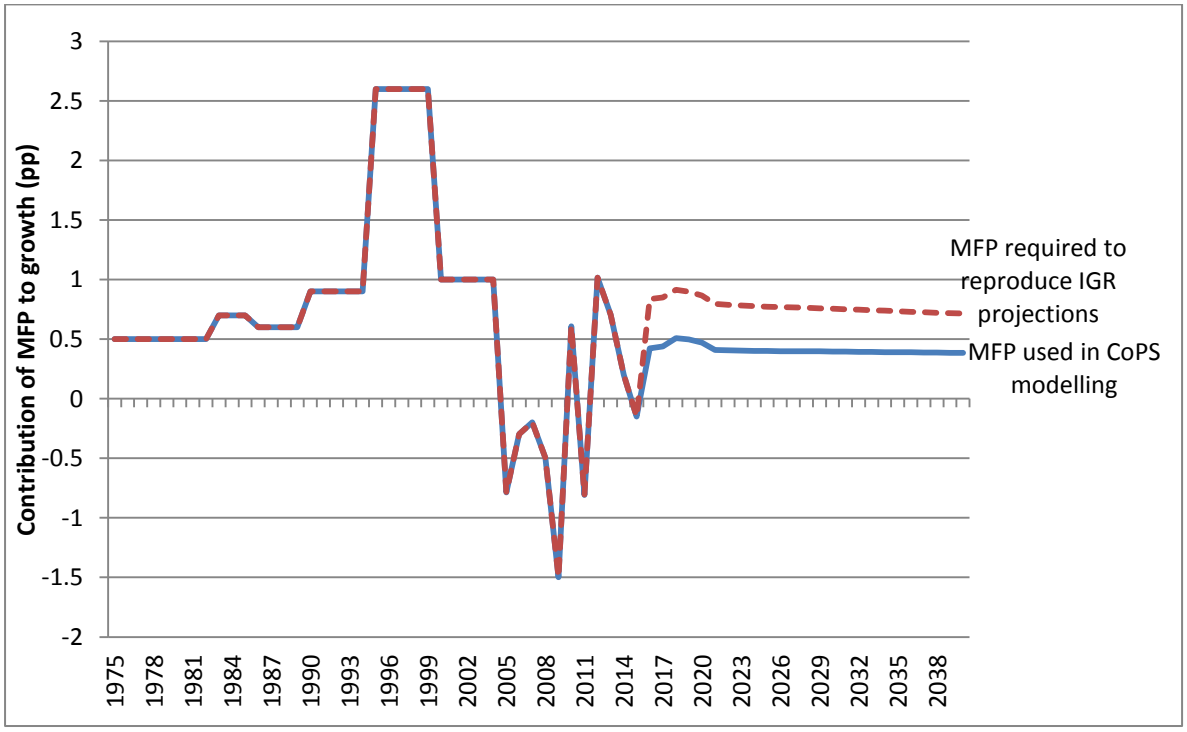
If the IGR has overestimated future growth in gross national incomes, what implications will this have? One risk is that, as a society we may be left with an inappropriately low level of savings for dealing with the rising health-care requirements of an ageing population, infrastructure requirements for growing cities, environmental degradation and other societal challenges. If incomes grow more sluggishly than expected, then the decision about who should forgo consumption to fund these investments becomes contentious. In a society made up of baby boomers, generations X, Y and those who follow, which generation will bear the burden? While today's younger generation will suffer the consequences of lower-than-expected economic growth, today's older generation may be best placed to contribute to the pool of national savings.

Savings behaviour is to a large extent a matter of individual choice and circumstance. However, savings behaviour can be influenced by government policy. The retiring baby boomers hold a large proportion of the nation's income-generating wealth, on which they enjoy concessional tax status. A possible route to increasing national savings would be to induce this generation to contribute more through reduced superannuation tax concessions.

On another matter, the IGR rightly points out that income is one of the most important determinants of living standards. What about the other determinants? The big drivers of real income growth – participation and productivity – while increasing living standards as they derive from measured income, can also detract from living standards. For a given level of income, living standards are improved through an increase in leisure time, through an increase in quality of life brought about by improved occupational health and safety standards, or through improved environmental amenity brought about by the adoption of more stringent measures to reduce our environmental footprint. Unlike real income growth, these are welfare-improving measures that suggest a reduction in participation or productivity.

The productivity gains that enable long term annual growth in real incomes of 1 per cent as forecast by the CoPS modelling or 1.4 per cent as forecast in the IGR are undoubtedly the key to ongoing improvements in standards of living. Productivity improvements are crucial to safeguarding our growing living standards in more ways than just boosting our real incomes. The average Australian already enjoys high material living standards. With strong growth in potential productivity, we might take more leisure time, and we might wind back productivity growth a little in order to work safer, or pollute less, while still enjoying positive income growth over the next generation.

Figure 1: Contribution of multifactor productivity (MFP) to growth, CoPS and IGR modelling



Sources: Productivity Commission productivity cycles (1975-2004), ABS (2005-2014), Vic-Uni Model and IGR (2015-2040)

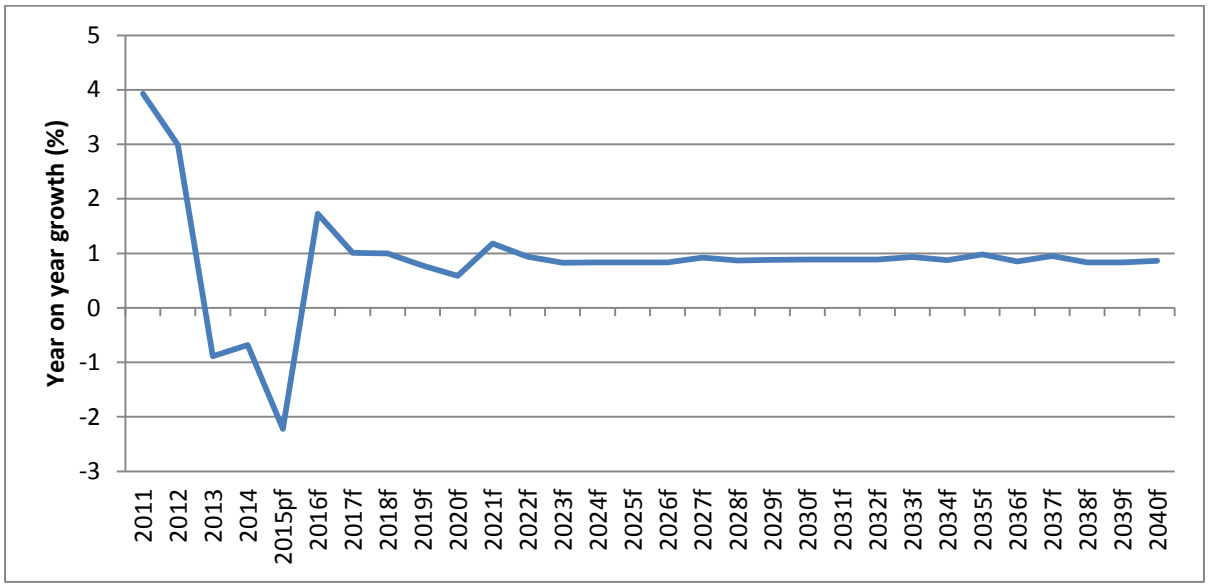
Technical Notes

The remainder of this paper sets out a summary of the technical background for the CoPS Vic-Uni model scenario.

Gross national income per capita

For the last three years, gross national income per capita has fallen. Per capita incomes will probably not return to their 2012 levels until 2020. After adjusting from the mining boom, the Vic-Uni model finds that growth in GNP per capita will settle at just below 1 per cent per annum, compared with the IGR's finding of 1.4 per cent.

Figure 2: Gross real income per capita, CoPS scenario



Sources: ABS (2011-2014), Vic-Uni model forecasts (f) and partial forecasts (pf).

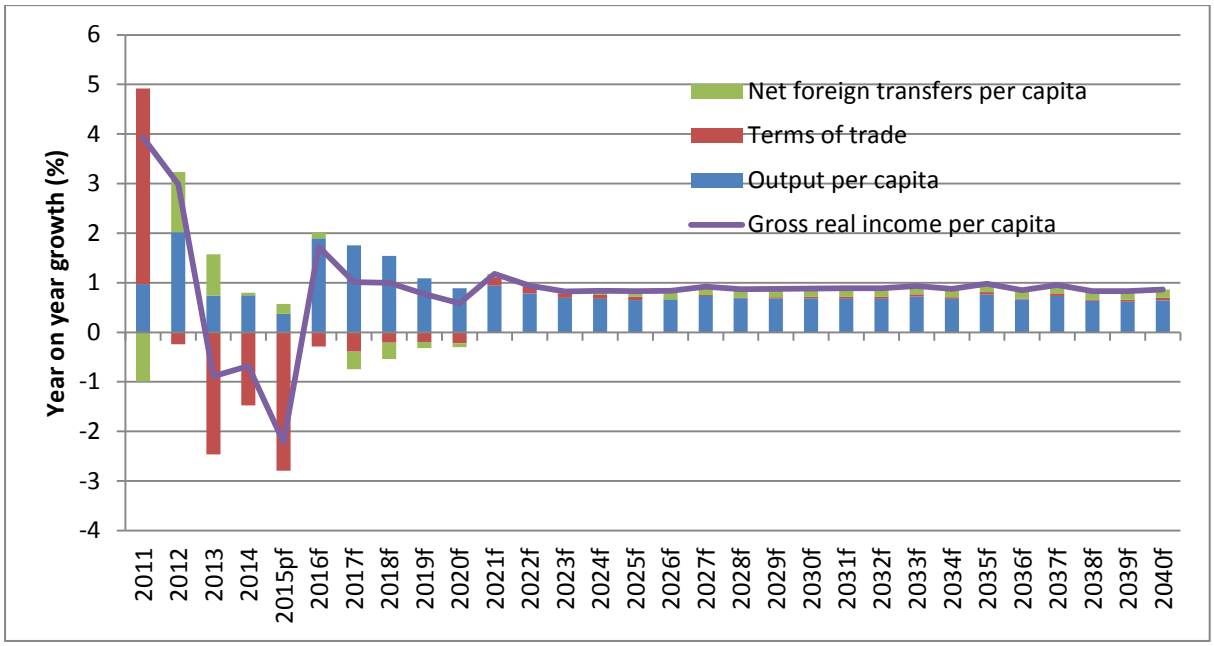
What drives the growth in incomes? The contributors to growth in real incomes are (a) growth in output, (b) changes in net transfers to foreigners, including foreign owners of equity or holders of debt, and (c) changes in the terms of trade (the ratio of export prices to import prices). The terms of trade affect real income because they influence the volume of imports we can purchase in exchange for a given volume of exports.

While domestic output is usually the main determinant of incomes, Figure 3 shows that the falling terms of trade will be have an important effect for the remainder of this decade. Falling commodity prices detract from our capacity to purchase imports, effectively reducing our real incomes. The downside risk of a fall in the terms of trade larger than assumed in this scenario is covered in a later section.

Significant expansion in mining operations (particularly LNG) in the latter half of this decade will mean an increase in net transfers to foreigners, as the owners of a large proportion of mining capital. This will detract from growth in incomes relative to growth in output.

From 2020 onwards, we assume that the terms of trade will have completed its post-mining-boom adjustment. From then on, growth in real incomes will be determined mainly by growth in output.

Figure 3: Contributions to real per capita incomes, CoPS scenario



Sources: ABS (2011-2014), Vic-Uni model forecasts (f) and partial forecasts (pf).

Growth in output

The drivers of growth in output per capita are (a) growth in employment per capita, or labour utilisation, and (b) growth in output per worker.

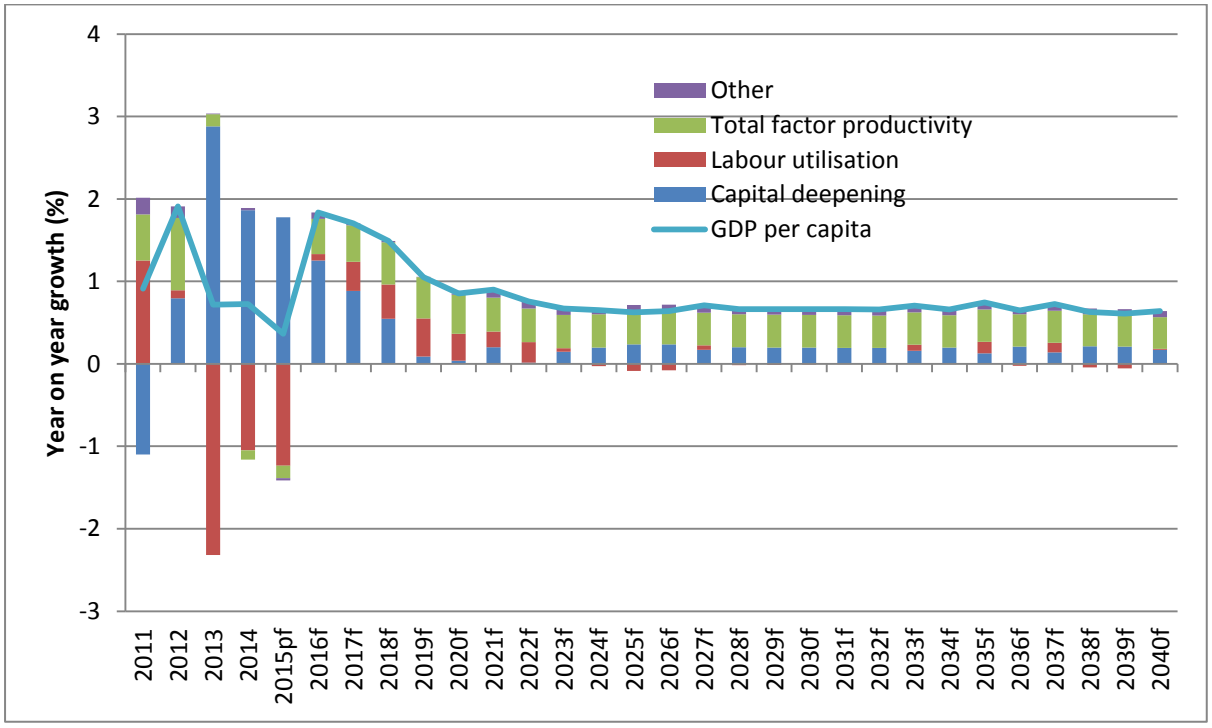
Over the last couple of years, labour utilisation has fallen, albeit involuntarily through rising unemployment. We assume that unemployment will fall for the remainder of this decade (although this would take a perhaps implausibly large fall in real wages), having a positive effect on labour utilisation. This will make a positive contribution to GDP growth (see Figure 4). Through the remainder of the forecast period, changes in labour utilisation have very little effect on growth. The ageing of the population reduces the participation rate, all other things equal. However, the IGR projects the participation rate to increase in many cohorts of the population, including females of most age groups, and males and females aged over 65. The net effect is very little change in the participation rate.

Growth in output per worker is made up of two components: capital deepening, and total factor productivity. Capital deepening is the effect on output per worker of a change in the aggregate capital stock per worker. Typically the capital stock grows faster than the workforce, so capital deepening has a positive effect on output per worker. Total factor productivity is the residual growth in output per worker that cannot be explained by capital deepening.

Australia's record on total factor productivity (TFP) has been variable. Over the last 40 years, TFP has contributed an average of around 0.8 percentage points to yearly growth in GDP. However, this

included an exceptional 5-year period in the 1990's when TFP contributed 2.6 percentage points to yearly growth. In recent times TFP has made a small negative contribution to growth. In the CoPS modelling, we assume that TFP will make an annual contribution to growth of 0.4 percentage points, consistent with the long run average excluding the exceptional performance of the 1990's.

Figure 4: Contributions to real output per capita, CoPS scenario



Sources: ABS (2011-2014), Vic-Uni model forecasts (f) and partial forecasts (pf).

Further decomposition of employment growth

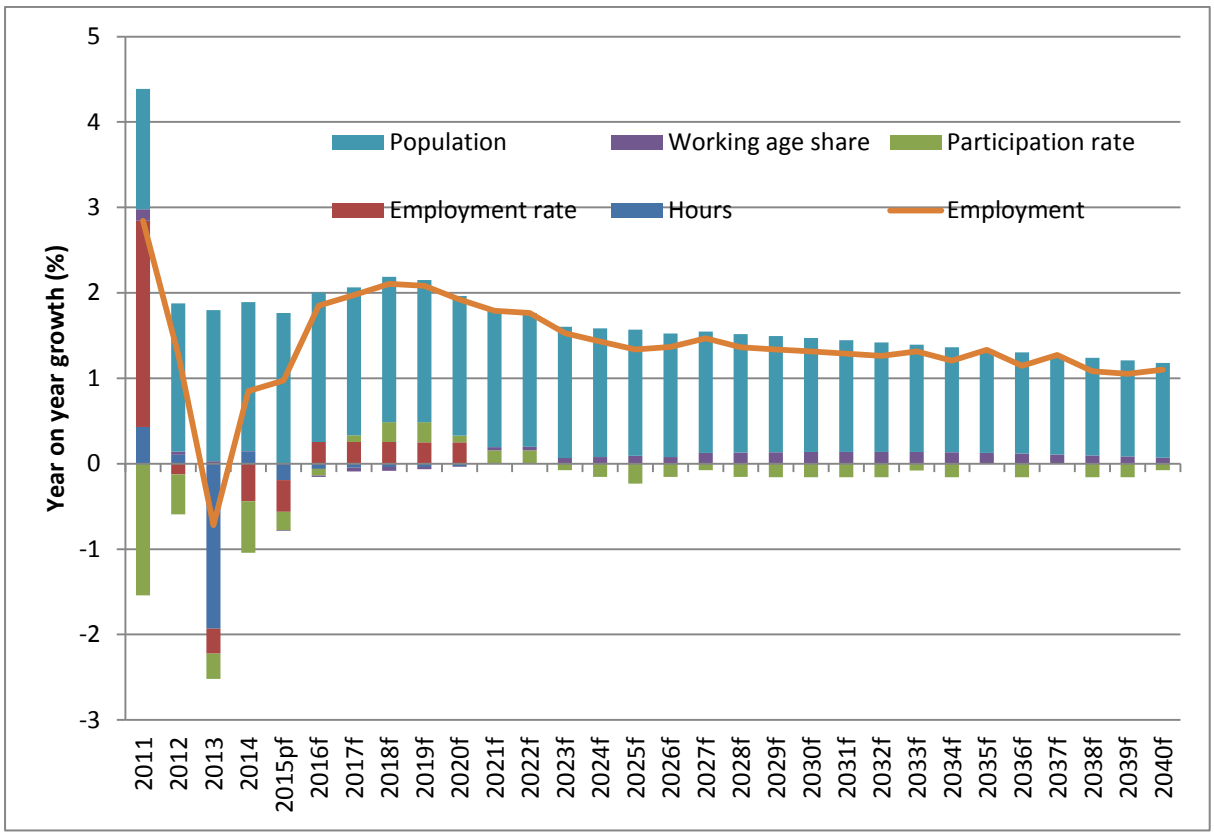
The main driver of employment growth is population growth. Other drivers are the share of the population that is aged over 15 (working age), the participation rate, the unemployment rate and hours worked per person.

For the remainder of this decade, an assumed decrease in the unemployment rate back to 5 per cent from its current level above 6 per cent drives an additional 0.25 per cent growth in employment each year. We also assume an increase in the participation rate, consistent with the IGR.

Beyond 2020, the IGR finds a decline in the participation rate (defined as the percentage of people aged over 15 who are in the labour force) as a result of workforce ageing. This is somewhat offset by an increase in the participation in many cohorts of the population, including females of most age groups, and males and females aged over 65.

Over this period, the falling participation rate is offset by an increase in the share of the working age population caused by a gradual fall in the share of the population of children aged under 15.

Figure 5: Contributions to employment growth, CoPS scenario



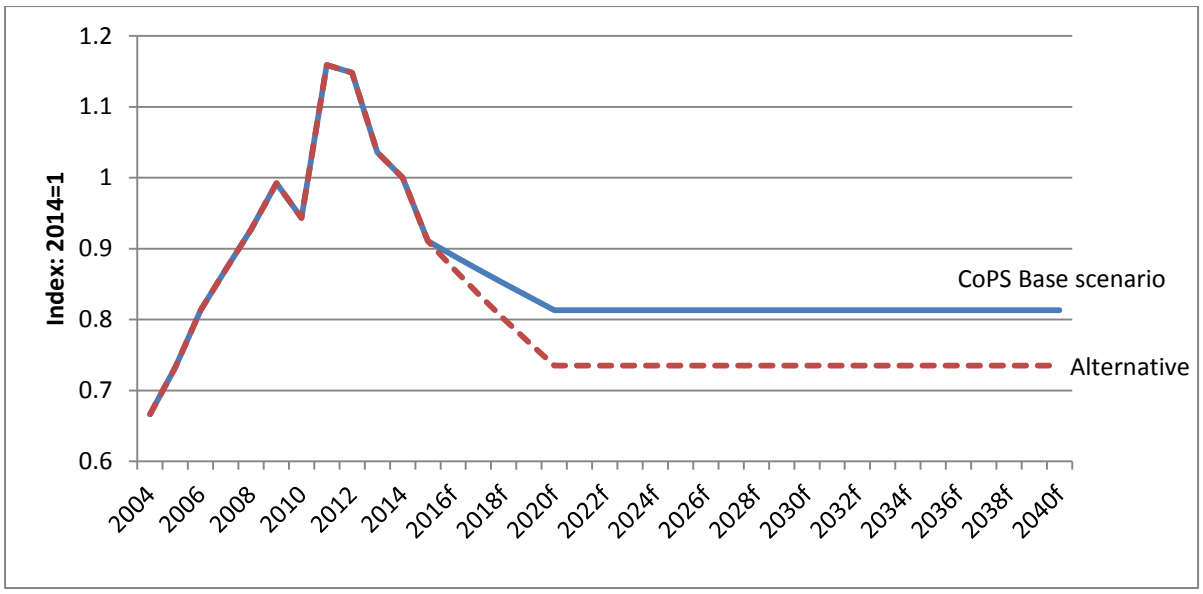
Sources: ABS (2011-2014), Vic-Uni model forecasts (f) and partial forecasts (pf).

Downside risk: Larger fall in Australia's terms of trade

The fall in the terms of trade as we adjust after the mining boom has a significant impact on real incomes for the remainder of this decade. As shown in Figure 6 below, the trajectory for the terms of trade assumed in the CoPS scenario, consistent with assumptions made in the federal budget, does not entirely undo the growth in the terms of trade made through the 2000's. It is possible that the terms of trade will follow a lower trajectory such as that shown in Figure 6, returning by 2020 to its 2005 level, rather than its 2006 level. The lower terms of trade will not have a significant impact on output. However, it exacerbates the negative impact that the falling terms of trade has on real incomes (Figure 7) for the remainder of this decade.

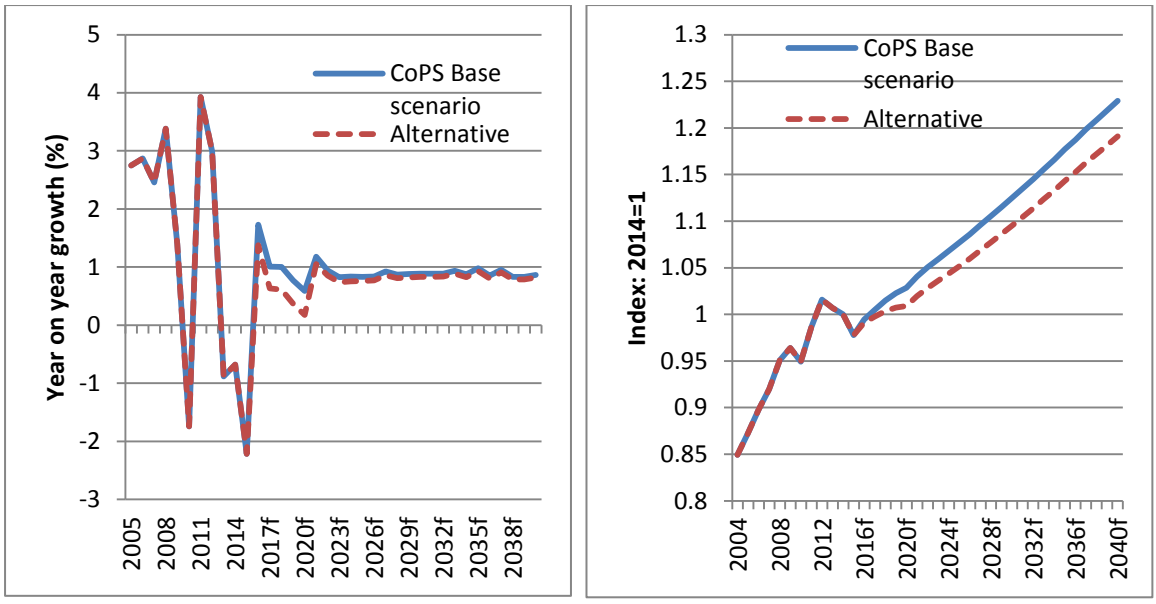
Beyond 2020, the growth rate of real incomes is similar in both scenarios. However, the second panel of Figure 7 illustrates that under the alternative scenario, from its lower starting point at 2020, the level of real income will not catch up to its base level. The loss is equivalent to approximately 2.5 years' growth.

Figure 6: Terms of trade index, CoPS base scenario and alternative



Sources: ABS (2004-2014), own calculations (f)

Figure 7: Real income per capita, CoPS scenario and alternative



Sources: ABS (2004-2014), Vic-Uni model forecasts (f) and partial forecasts (pf).