Lies, Damned Lies and the 2015 Intergenerational Report

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Lies, Damned Lies and the 2015 IGR
Abstract

The Australian Government releases an ‘intergenerational report’ at least once every five years, the latest of which (being the fourth report) was published in March 2015. These reports contain 40-year projections of a number of key economic, demographic and fiscal measures, with the intent of assessing the long-term sustainability of current Federal Government policies in the context of the economic and demographic outlook and the challenges that they present. This illustration of the long-term consequences of current and potential fiscal decisions can help inform the public debate on critical issues such as sustainability of the superannuation and tax systems, fiscal policy, and intergenerational equity.

The content and value of the 2015 intergenerational report has been clouded in the public debate, with a general perception that it is largely a political document to push for the Government’s agenda. This paper reviews the report in the context of its fundamental purpose (as specified in the relevant legislation), and assesses its value in informing the debate on long-term issues such as intergenerational equity and sustainable Government policies. We also propose ways in which the report’s analyses and examination of these key issues can be improved and discuss how the Actuarial profession can contribute in this area.

For the sake of clarity, unless otherwise stated, in this paper:

- “IGR” refers to the 2015 intergenerational report
- “Government” refers to the Federal Government
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1 Lies, Damned Lies …

1.1 The quote

The title of this paper is a play on a well-known saying. As Wikipedia says:

Mark Twain popularized the saying in *Chapters from My Autobiography*, published in the *North American Review* in 1906. "Figures often beguile me," he wrote, "particularly when I have the arranging of them myself; in which case the remark attributed to Disraeli would often apply with justice and force: 'There are three kinds of lies: lies, damned lies, and statistics.'"

Alternative attributions include, among many others (for example Walter Bagehot and Arthur James Balfour) the radical English journalist and politician Henry Du Pré Labouchère (1831–1912), Jervoise Athelstane Baines, and British politician and man of letters Leonard H. Courtney, who used the phrase in 1895 and two years later became president of the Royal Statistical Society.

Given the nature of the intergenerational reports, it is perhaps appropriate both that the expression cannot be attributed for certain and that it is popularly attributed to a politician.

1.2 The motivation

There was a perception among portions of the general public that the intergenerational report released in 2015 ("IGR") by then-Treasurer, Joe Hockey, was a political document. This may also have been further galvanised by the public ‘backing away’ of media personality Dr. Karl Kruszelnicki (who appeared in several advertisements promoting the report), where he mistakenly “thought that it would be an independent, bipartisan, non-political document”

The key conclusion of the IGR effectively paints a fiscal surplus forecast of (at the time) “proposed” Government policies (i.e. a full implementation of the 2014-15 Federal budget), which it contrasts with the fiscal deficits of “current” and “previous” policies. This is shown below.
Thus, despite the promise of the IGR being “the social compact between the generations” (as stated by Joe Hockey in his Treasurer’s Foreword to the report), it simply becomes a demonstration of the Government’s solution rather than a critical and objective analysis of the issues the report is meant to illuminate.

Our view is that the IGR is largely a missed opportunity to help the Australian public to understand more deeply key long-term issues facing future generations and to encourage more productive public debate that would strengthen this “social compact”.

1.3 The (initial) paper

Initially, when we embarked on this paper, we felt that, while there is validity in the criticism levelled at the IGR, the underlying analyses and models used by Treasury to project the population, the economy and the Government’s fiscal balance should be able to be used to provide deeper insight into key long-term issues such as intergenerational equity and sustainable Government policymaking. We therefore set out to build a simple proxy of the models used for the IGR and extend them to further explore these issues.

We have indeed built a proxy that reasonably matches the IGR results. However, in the process, we have found that certain key assumptions and design aspects of the IGR models themselves led to several limitations that would impede this goal.
1.4 The (final) paper

Given the above, while there is much background and detail to the assumptions and models used in the IGR and our proxy, and the output produced by these models, they have been left out of scope from this paper (though Appendix B contains a high-level overview of how the IGR was constructed). Some aspects of these will be included in our presentation at the Financial Services Forum instead.

This paper is therefore more conceptual in nature, in which we:

- examine the merit of the IGR’s fundamental purpose (Section 2);
- examine the gaps within the IGR, as well as its underlying analyses and models, in highlighting the key issues given its intended purpose (Section 3);
- discuss how the IGR’s analyses and examination of these key issues can be improved/sharpened, and how the actuarial profession can contribute in this area (Section 4); and
- discuss what can still be learned from the IGR as it stands (Section 5).

We note that the Actuaries Institute submitted an excellent response to the IGR, which included recommendations to improve the modelling and analyses in the report (as well as providing commentary on policy positions)\(^1\). Appendix C contains extracts of this response.

1.5 The way forward

An intergenerational report, both in concept and as legislated, represents a significant opportunity for the Government of the day to engage the nation in a mature conversation about major policy initiatives. Sadly, the IGR falls far short of the mark.

We believe that a proper IGR would provide vital context to consideration of all of the major policy issues facing Australia. For a profession that defines itself in terms of its ability to help its clients to understand and prepare for the future and that has a proud tradition of acting in the public interest, fixing the IGR is a worthy cause indeed.

In our view, the IGR requires a model that vastly better fits its intended purpose. Far more than this, however, intergenerational equity needs to be defined and we need to be able to find a way to measure it. This will include assessments of the robustness and adaptability of policies/systems that support the different generations, rather than just single-point forecasts of financial measures.
The key conclusions of the report would then have been starkly different to the one illustrated in the graph above (noting that the world has now moved on from the “proposed policy”, merely a year after the IGR’s release).

We suggest that the work required suits the actuarial mindset and skill set. It is an obvious application of the principles of the Actuarial Control Cycle.

We hope that our paper leads at least some actuaries to take up the challenge.

1.6 Errors and omissions

This paper has changed significantly since its conception. While we have attempted to include proper attributions for quotes and other references, it is quite possible that there are errors and omissions. We apologise for these.

While we are about it, we make the usual statement that this paper reflects our views (at least, it is intended to do so) but does not necessarily reflect those of the Institute or of our employers.

Finally, we would like to acknowledge the significant contribution from our peer reviewer, Andrew Wakeling, who patiently guided us from the rocks and shoals of our initial draft paper to what we feel has turned out to be a safe harbour.
2 What a Great Idea!

2.1 A national conversation

Government policy can have far-reaching impact, particularly across generations, shaping the way that the economy and society in general operate. Witness the National Health Service introduced in the UK in 1948, or the introduction of compulsory superannuation in Australia in 1992.

So, it makes sense for there to be some kind of periodic review process to assess the long-term impact of current and proposed Government policy and to facilitate a national conversation. This would serve to remind policymakers that serious policy needs to be properly thought through. It would be a hallmark of a mature society.

2.2 Legislation

Australia passed such legislation in 1998. Among other things, the Charter of Budget Honesty Act 1998 requires that the Government release an "intergenerational report" at intervals of no more than five years. To date, four intergenerational reports have been released: in 2002, 2007, 2010 and 2015.

According to Section 21 of the Act:

An intergenerational report is to assess the long term sustainability of current Government policies over the 40 years following the release of the report, including by taking account of the financial implications of demographic change.

In our view, the key points here are:

- the term “intergenerational report”;
- the assessment of long-term sustainability;
- the selection of 40 years as the long term;
- the financial impacts of demographic change; and
- the significance of the word “including”.

We discuss these below.

2.2.1 An “intergenerational report”

As actuaries, we naturally assume that “intergenerational” refers to intergenerational equity. Indeed, that becomes the prism through which we view the report – as exemplified by the aforementioned Actuaries Institute’s submission in response to the IGR. Also, the Parliamentary Library Briefing Book\textsuperscript{iv} (containing articles written “to
provide Senators and Members a high level perspective of key public issues”) for the 44th Parliament says:

The basis for conducting [the analysis as required of intergenerational reports under the legislation] is the principle of intergenerational equity – that actions benefiting current generations should not compromise future generations.

Actuaries have a long-standing interest in intergenerational equity. It is, for example, the cornerstone of the traditional with-profits contract, where sales to the new generation of policyholders are financed by the in-force, in exchange for lifetime transfers of profits. Over time, actuaries developed a range of tools (including reversionary bonuses, terminal bonuses and asset shares) in their attempts to achieve and measure intergenerational equity.

Even without reading the word “equity” into it, an intergenerational report sounds like a great idea. At the very least, it would consider the impact of Government policy on different generations and highlight issues to discuss and address.

2.2.2 Long-term sustainability

Long-term sustainability surely must be the objective of core Government policy. We suggest that the Australian principle of a “fair go” embodies much of what the nation would instinctively regard as sustainable policy – namely, that those who can afford it pay more, so that those who need help can receive it, but that this is not done to the point of stifling the economy – i.e. not to excess.

We think that, for Government policies to be sustainable in the long term, they must embody intergenerational equity. As a concept, this clearly extends beyond questions of the fiscal surplus or deficit at any point in time. If the policies really are sustainable in the long term, then they will be appropriate for each current and future generation; broadly, each generation will interact with “the system” in a consistent manner, drawing down in times of need and contributing in times of strength, such that the system is able to continue indefinitely – or at least in the long term.

In addition, we suggest that policies are more likely to be sustainable if they make the system more flexible and adaptable. For example, intergenerational equity could trivially be achieved by having no tax or welfare system (requiring every generation to take care of itself), but this would not cope well with times when the economy came under stress.

Finally, we suggest that policies are more likely to be sustainable if they lead to greater economic productivity – provided, of course, that this is not at the expense of future utility (think climate change and ecological diversity). In essence, this is the concept of being better off than your parents.
2.2.3 Selection of 40 years as the long term

The legislation clearly defines 40 years as the long term. This is less than a working lifetime, let alone a complete lifecycle. No population cohort in the projection experiences the full range of the Government’s policies, since those born in 2015 are only 40 in 2055, while those retiring (at 70) in 2055 are already 30 in 2015.

For a properly informed national conversation, we believe that consideration must be given to the true long term: 100 years or more. What does the proposed policy mean for the generations that would live their lives under it, as well as for those who are alive today? Of course, the legislation does not prevent this longer view.

We should also clarify that the point of extending this long-term view to at least 100 years is not in its predictive value, since a model that can reliably predict economic outcomes over even the next year or two would be most rare and valuable! Rather, we suggest that it takes at least this length of projection to obtain something approximating “steady state”, where the full structural impact of policy settings can be seen.

2.2.4 Financial impacts of demographic change

Demographic change is a powerful – and relatively predictable – force affecting the outworking of Government policy. It changes societies and the systems in place to support them, whether or not this is intentional. Understanding the financial implications of demographic change is therefore essential in the creation of a sustainable and adaptable system.

At its simplest, the financial impacts of demographic change can be measured by projecting the number of males and females in the population at each age and considering how the relevant policy applies to each of those cohorts.

Arguably, however, there are demographic changes that are not covered in this approach. Is it appropriate to consider the population as a whole, or should it be subdivided along certain lines, including socio-economic status? As Wikipedia says:

Demographic analysis can cover whole societies, or groups defined by criteria such as education, nationality, religion and ethnicity. Educational institutions usually treat demography as a field of sociology, though there are a number of independent demography departments.

**Formal demography** limits its object of study to the measurement of population processes, while the broader field of **social demography** or population studies also analyzes the relationships between economic, social, cultural and biological processes influencing a population.

Also, it’s a two-way street – at least in part. Policies affecting migration and the fertility rate will influence the growth of the population and the rate at which it ages. Policies that improve the nation’s health will also increase longevity and will affect the demand for resources to be at the disposal of the retired.
By its use of the word “including”, the legislation clearly recognises that there is much more to the national conversation than the financial impacts of demographic change.

To us, this is a key for the intergenerational report to include any or all of the following (and more):

- discussion of the societal merits of Government policies;
- discussion of macro issues such as wellbeing (as discussed in the 2010 intergenerational report);
- analysis of the robustness of the proposed policies in the face of potential economic and social shocks;
- analysis of expected changes in distribution of income and wealth;
- analysis and discussion of a “whole of economy” projection, allowing for the private sector and the remainder of the public sector (principally, the States); and
- comprehensive exploration of uncertainty, including sensitivity analyses and scenario testing.
3 What a Disappointment!

Despite the overall sensible intent of the intergenerational reports as specified in the legislation, our examination of the IGR and work in building a simple proxy of the model found that there were significant gaps that prevented it from achieving these goals. These are discussed below.

3.1 Unsustainable “sustainability”

The IGR’s measure of “sustainability” appears to be limited to balancing the budget. We do not believe that this is adequate.

We note that the 2010 intergenerational report contained a whole chapter (Chapter 6) on the subject of “a sustainable society”. The Overview to the chapter begins:

Sustainability requires that at least the current level of wellbeing be maintained for future generations. The Government’s policies seek to do more than this. The Government’s goal is to improve the wellbeing of current and future generations.

Wellbeing and sustainability are multi-dimensional concepts that go beyond material living standards. In this report wellbeing and sustainability are assessed through the prism of the stock of economic, environmental, human and social resources.

To us, this was a step in the right direction and it is disappointing that the latest IGR retreats from this position.

3.2 Intergenerational equity is invisible

Like its predecessors, the IGR’s model is built on a projection of GDP. In turn, the fundamental building block of the IGR’s projection of GDP is an hour worked. Every hour worked in a particular year is worth the same, regardless of who is doing the work. That is, the IGR gives equal weight to an hour worked in a café by an actuarial student putting herself through university and to an hour worked by the 60-year-old managing partner of a law firm. And it apparently has not heard of the gender pay gap.

Because of this lack of generational information, and because of its simple tax revenue assumption, the IGR therefore cannot tell us where the revenue is coming from. It is simply not possible to use the IGR to make any meaningful inference in relation to intergenerational equity.

Worse, the IGR appears to assume that equity is achieved if the books are balanced – because this means that there is no additional strain on working generations to pay for the retired. But where is the equity if the welfare programs for the same generations are cut so that the living standards of the elderly can be maintained?
3.3 Narrow thinking

The IGR uses a relatively simple model to project population, GDP, revenue and expenditure. Despite the relatively arbitrary nature of some key assumptions, little effort is made to illustrate the degree of uncertainty and the implications of alternative outcomes. While the IGR includes a sensitivity analysis, it is an academic exercise of changing one assumption at a time, which primarily highlights productivity growth as a key driver of economic growth. The outcomes of specific policy decisions/proposals (such as the increase in Age Pension eligibility age) or their alternatives are not explored.

As the model is relatively simple, it could be readily extended for 100 years, just to see what happens in something more reasonably thought of as the “long term”. However, the IGR doesn’t do this – and we have seen no indication that it has even been considered.

Despite its acknowledgement of the 3 key drivers of economic growth (population, participation and productivity), the IGR and its model do not establish explicit feedback between fiscal initiatives and these drivers. For example, while an input to expenditure, the contribution of the National Disability Insurance Scheme (NDIS) to productivity is not explored. There may be limited data given the current stage of the scheme’s development, but it shouldn’t result in this lack of feedback. Could actuaries use the ‘limited data’ excuse in dismissing an assumption that could have a material impact on the output?

More significantly, while previous intergenerational reports had taken steps down the path of considering the wider question of what form of society we want to leave to future generations, the latest report has no such discussion – again, the primary focus is on fiscal sustainability and the IGR implicitly assumes that the stars will align once this is achieved.

3.4 Household-style budgeting

All components of the IGR’s model are focused on producing a projection of the Government’s underlying cash balance – the net cash receipts from Government operations plus net cash capital investment (on non-financial assets), less financing cash flows⁶.

This constrains the national conversation, especially since tax revenue is assumed to be a constant and somewhat arbitrary percentage of GDP. To argue for a policy framework that doesn’t balance the books over the next 40 years, you must be in favour of high taxes or be a reckless spendthrift, happy to rack up crippling debt.

While we do not pretend to be particularly expert at macro-economics, we note that there is a very real debate about the relative importance of “balancing the books” and growing the economy.

We are tempted to look at the USA in this regard and ask how they have managed to get it so wrong for so long.
We suggest that a balanced budget may be an appropriate objective, but it needs to emerge from the conversation, not be the key constraining parameter.

3.5 Where is the rest of the economy?

Focusing on the Government’s budget gives an incomplete and misleading picture, because the services demanded and consumed by individuals are typically met from various sources. Omitting these other sources misstates both the level of demand and the cost of meeting that demand.

For example, as per Section 2.2.1 of the IGR, the Government meets about 40% of all Health costs, with almost 30% picked up by other governments. Non-government expenditure on Health is about one third of the total, largely as a result of private health insurance and self-funding of the “gap”. So what does a particular projection of Government expenditure on Health actually mean? How does it inform the national conversation, if we don’t know what proportion of future Health consumption the Government expects individuals to fund?

Retirement income is another example. Compulsory superannuation (let’s call it SG for short) has significantly changed the landscape. We have not studied the literature, but we wonder how much SG has replaced corporate-funded retirement income rather than reducing reliance on the Age Pension. However, we do feel that SG (etc) has led to a higher pool of retirement savings than would otherwise have existed. Therefore, there will be increasing capacity for retirees to be weaned off the Age Pension. When the projected expenditure is simply shown net of the assumed impact of this, the national conversation is less informed.
4 Calling all Actuaries!

4.1 The public good

As a profession, while balancing commercial interests, we used to be fundamentally invested in the public good: we helped insurers and employers to provide for widows, orphans, the sick and the retired. Our impact on the economy was incalculable, as was the crucial value that we brought to the underprivileged.

All of that has gradually changed. Competition and the inexorable change in consumer needs and wants have fundamentally changed the landscape. In Australia, at least, with-profits policies and defined-benefit corporate funds are long gone. Now, a large part of the risk that was once borne by institutions falls on the individual, who may or may not be well placed to bear it.

More disturbing, the UK profession has deservedly suffered repeated heavy blows to its reputation in the past twenty years or so, as a result of its acquiescence to poor sales and product management practices.

Perhaps the same is about to happen in Australia in relation to financial planning and life insurance scandals?

Recent political turmoil suggests that Australia is at a watershed in relation to public policy. Perhaps there has never been a better time for us to remember our commitment to the public good and to seek to honour it?

So, sign up here!

But what do we (the profession and the nation) need you to do?

4.2 Build a better mousetrap (well, a better model, at least)

We suggest that the first thing that can be done is to improve on the IGR’s model, to better fit its intended purpose.

Several features are required. Each, by itself, would represent a vast improvement. Once they can be combined, enormously powerful results can be achieved.

- extend the revenue model to track cohorts;
- also track expenditure for cohorts;
- incorporate interactions between the fiscal balance and the key drivers of economic growth;
- incorporate economic cycles, at least in scenario testing;
• extend the timeline to reach a form of steady state, to uncover the true structural issues;

• expand the model to include other governments and the private sector; and

• allow for the distribution of income within cohorts.

Few of these features are easy, but most can probably be added incrementally. That is, crude estimates can be used to start with – based, we hope, on real data – and the models refined thereafter.

We do not pretend that our list is exhaustive. For example, we have deliberately avoided the whole question of the deficiencies of Australia’s national accounting system.

Time does not permit us to discuss these elements in great detail, but we would make the following observations:

4.2.1 Extend the revenue model to track cohorts

This looks rather hard, but it is essential. There can be no meaningful cohort modelling without it. We think that ABS and ATO data would be a useful starting point, supplemented by some common sense. Perhaps the Luxembourg Income Study (LIS)\(^1\) would also help? In March 2016, the Guardian published their investigation into the income prospects of Millennials in a number of countries compared to their predecessors using data from the LIS (with interesting outcomes, but that would be for another paper)\(^ {vii} \). A similar application of the LIS data can be used for the purpose of the suggested cohort modelling.

4.2.2 Track expenditure for cohorts

This is quite straightforward for anyone with access to the IGR’s models. Our own proxy model uses age-based estimates for expenditure, so it would also be a starting point.

4.2.3 Incorporate interactions between the fiscal balance and the key drivers of economic growth

Much of the Government’s expenditure has at least a partial flow-on benefit to the economy via one or more of the population, participation and productivity drivers. Some programs act to reduce expenditure in other areas.

For example, a healthier and better-educated workforce is capable of greater productivity, while taxing tobacco reduces expenditure on health (and increases the workforce).

\(^1\) The Luxembourg Income Study (LIS) acquires income, wealth, employment and demographic data from a large number of countries and makes them available for public use, enabling cross-national comparisons and social science research.
Modelling the linkages between policy settings and fiscal outcomes could quickly become very complex, since everything affects everything else. However, simple and obvious correlations could be made and would already serve to improve insight and accountability. For example, increased spending on child care infrastructure should boost participation rates.

4.2.4 Incorporate economic cycles

There have been numerous studies on economic cycles, which should be able to be incorporated to the model through variables such as productivity growth, participation rates/unemployment, etc. The point of this is less about how the economy is expected to behave in the projection period, but rather seeing which policy settings would provide better outcomes through scenario testing (more on that below).

4.2.5 Extend the timeline to reach a form of steady state

Again, anyone with the IGR’s models or a decent proxy could perform such an extension. As mentioned before, this is not so much about crystal-ball gazing as it is about gaining a proper understanding of the long-term structural implications of policies.

4.2.6 Expand the model to include other governments and the private sector

It may not be as hard as it first appears to produce something that is at least reasonably credible.

4.2.7 Allow for the distribution of income

We put this in the list to make the rest look easy!

4.3 Propose ways to measure and assess intergenerational equity

One of the first challenges of tackling intergenerational equity issues is to define and/or illustrate what intergenerational equity is, or looks like.

We note that it is normal in Australia for the young to have low incomes and no wealth. As they go through their working life, most increase their income and their wealth, with the majority taking out a mortgage. In their 30s and 40s, income increases but so do expenses, including the costs of raising a family. Then expenses fall away, to the extent that those around 50-54 probably have the highest disposable incomes. As they wind down to retirement, with their homes fully owned, the need for income reduces, so we see the older cohorts with lower disposable incomes.

So, it’s not possible to measure intergenerational equity by comparing the current position of different age groups. However, we suggest that it should be possible to form a view about the likely trajectory to be followed by future generations. Perhaps
a “probability of equity” measure could be developed. Is there a role here for the type of actuarial techniques used in appraisal values?

We acknowledge that the concept of “equity” is multi-dimensional in nature. While the common view (and the primary battleground for exposing intergenerational inequity) today is that younger generations are locked out of the property market compared to their predecessors, what of exposure to wars, or the Great Depression? What did health or child care look like for Generation X compared to Millennials? What about access to a vast array of information within a few clicks of a button or taps on a screen, brought about by technological advancements – what does this do to wellbeing? And so the list goes on.

In August 2015, the Intergenerational Holistic Equity Index was developed through a research partnership between Global Voices Research Fellow, the Intergenerational Foundation, and a UN ECOSOC Delegate (who was an actuarial student at Macquarie University at the time). This index captured economic, environment and wellbeing factors to measure improvements in the experiences of working age Australians. As at the time of writing, the full report detailing this index was not publicly accessible, and so we could not examine this in greater detail, however it does appear to be a reasonable index for intergenerational equity, and could be further explored.

4.4 Apply scenario testing

With most of the above modelling improvements in place, the model should be able to sufficiently capture key interdependencies between relevant factors/variables. Thus the outcomes of specific and key policy decisions/proposals or their alternatives should be able to be analysed and tested.

More coherent ‘real-world’ scenarios that examine potential shifts in population and economic trends can also be developed (much like APRA’s expectations on stress testing these days!). For example, by modelling economic cycles in the projection, one could test the implications of a recession in China, or an even more extended economic slowdown.

In our view, proper scenario testing gives vital insights into the flexibility and adaptability of the “system” and the policy settings. This goes to the heart of the question of sustainability.

4.5 Join and inform the debate on the big issues

We are pleased to say that the Institute has runs on the board in this area. For example, in addition to its response to the IGR, the Institute has released white papers covering Australia’s Longevity Tsunami (2012) and Retirement Incomes (2015), and a green paper on Unlocking Housing Wealth (2016).

Given access to the relevant data, actuaries should be able to highlight and analyse the dynamic links between population, economic and fiscal policy outcomes. While actuaries are not expert macro-economists by default, our analytical and holistic
mindset, as well as financial acumen, should equip us well for this task – the simple proxy model we built (based on publicly available data) that could reasonably replicate the IGR results is a taste of this capability.

By extending the model through the suggested improvements, developing tests/scenarios that would prove the most insightful, and communicating the implications effectively (all of which sound like a typical actuarial day job!), this should empower us to further influence the direction of the public debate relating to intergenerational equity and sustainable policymaking.
5 What Can be Learned from the IGR?

While this paper provides a critical examination of the IGR, we acknowledge that there are critical findings in the IGR that would still be useful in directing the national conversation on the long-term outlook of the Australian economy and society.

We should clarify that this section is not an exhaustive list of insights that could be obtained from the IGR. However we do consider them to be key findings that should generate important questions and debate.

5.1 The power of productivity

While we accept that some people see no need for the standard of living to rise, we suggest that it is core to the social compact between the generations. To achieve that requires the ability to acquire more for the same real cost. In the short term, individuals can do this by borrowing or by working longer hours, but debt must eventually be repaid and there is a limit to the additional hours that can be worked. So these are cyclical or short-term in impact.

In fact, it is productivity growth that is the long-term engine of rising living standards. The IGR illustrates this very clearly with this chart (from the Overview document):

![Components of Real GDP Growth per Person]

GDP per person is actually a measure of production, rather than income, but it is closely correlated with the income measure: GNI per person.
The IGR projects GNI by adjusting GDP. It assumes that the terms of trade deteriorate until about 2025, acting as a drag on GNI growth relative to GDP growth, but that GNI grows at much the same rate as GDP thereafter.

Chart 1.24 of the IGR shows the central importance of productivity to the growth in real GNI, but it also shows different periods of significant secular trends.

As the IGR says (p. 33):

Productivity growth has been the main driver of growth in real average incomes over the past 50 years and is assumed to remain so in the future.

In the 1980s, growth in real GNI per person was supported by a significant contribution from labour utilisation, reflecting an increase in the proportion of the population being of working age and increases in workforce participation. The 1990s saw strong growth in labour productivity, which offset a small negative impact of the terms of trade.

Over the past decade, and despite a broad-based slowdown in productivity growth, income growth increased due to unprecedented growth in the terms of trade as a result of the resources boom.

As has been widely analysed and discussed, over the next decade or so, the fall in the terms of trade is projected to reduce growth in GNI, with growth for the majority of the next 40 years driven by productivity growth.

The IGR has some tabulation of sensitivity tests, covering the key drivers of population, participation and productivity, including Chart B.1, which illustrates the relative impact of each sensitivity test.
The tested productivity changes result in the largest variance in income per person. (Note that the chart uses the change in real GNI per person, but a similar picture would be obtained if real GDP per person were compared.)

5.2 A growing output gap
Chart 1.25 from the IGR shows the output gap (the difference between the actual and the potential output of the economy) over almost 40 years. The output gap is notoriously difficult to measure, but let’s take Treasury’s calculations at face value, since the general shape doesn’t seem unreasonable to us.

We believe that the growing gap represents an opportunity for expansionary policies to drive economic growth and soften the transition from the mining boom. This is in contrast to austerity measures that focus on a rapid return to fiscal balance. As previously suggested, while a balanced budget may be an appropriate objective, it should not be the key constraint.

We note that while there are constraints in reallocating resources or labour mobility (environmental, skills, legal, among many others), policies that alleviate some of these constraints should be part of the solution. Ultimately, keeping the economy ‘bubbling along’ has to be a key objective and mechanism for enabling intergenerational equity.

5.3 Demographic outlook

News flash: the population is growing and becoming older!

While the demographic outlook outlined in the IGR is not surprising, it is still valuable to see the figures crystallising this narrative. (We note that, as the Actuaries Institute points out in its submission, it would have also been very valuable to see how and why the demographic outlook and assumptions had changed since previous intergenerational reports.) Importantly, it is reports like the IGR which ensure that this reality is not lost in the public consciousness and debate.

Key aspects of the demographic outlook are outlined below.

5.3.1 Population growth

Average annual population growth is assumed to be 1.3%, slightly slower than the growth rate over the past 40 years of 1.4% (but interestingly slightly higher than the 1.2% assumed in the 2010 intergenerational report, because of a higher assumed migration rate). The Australian population is expected to reach 39.7m by 30 June 2055 (from 23.9m at 30 June 2015). It is worth noting that the “big Australia” debate was brought to the forefront of the public mind when the 2010 Intergenerational Report was released with its projected population figure (of 35.9m by 2050).

5.3.2 Life expectancy increases

Table 1.1 from the IGR illustrates current and expected life expectancies, using the cohort method. These are expected to rise such that those born in 2055 would on average almost reach the age of 100. When Pension eligibility age reaches 70 by 2035, males reaching that age would have an average life expectancy of 19.3 years, and 21.4 years for females. Chart 1.3 uses period life expectancy to demonstrate how far we have come through history. The enormous implications on
the economy, society in general and the systems that support them go without saying.

5.3.3 Migration (i.e. net immigration)

We all appreciate that one of the balancing factors of this ageing population trend is the influx of younger migrants. Chart 1.4 of the IGR, which looks at how the age distribution of Australia’s population compares to that of migrants, is a clear illustration of this. In 2013-14, compared with the general population, migrants were far more likely to be aged between 15 and 34 – an age group where people would
typically enter the workforce, grow and advance in their careers and productivity, start families, etc – and far less likely to be 45 or older. This represents a vast opportunity to be harnessed, though balancing this is the aforementioned “big Australia” debate, and whether this would be ecologically sustainable.

There are numerous other fascinating figures and charts in the IGR that add further context to the population narrative. We have left them for readers to explore further in their own time.

5.4 Participation Rates

While overall workforce participation rates (for all people aged 15 years and over) are expected in the projection to fall from 64.6% in 2014-15 to 62.4% in 2054-55 due to underlying demographic factors, they are expected to increase for all working age cohorts from 2014-2015. Looking back 40 years, there had also been quite a marked increase since 1974-75 in participation rates across all working age cohorts. This is illustrated in Chart 1.11 of the IGR.

As the IGR states (p. 19), key drivers of this would be the increase in female participation rates, migration, and, for the older age groups, the increase in less physically demanding work and technological advances that support quality of life.

What policies and structures could be put in place to have “sustainable” participation rates? As discussed above, it would be essential to explicitly attribute fiscal initiatives (such as child care expenditure and the NDIS) to projected
participation rates, as one of the key drivers of economic growth. That said, the IGR did attribute a 0.8 percentage point increase in the 62.4% total participation rate in 2054-55 to the change in the Age Pension eligibility age from 65 to 70 years.

5.5 Health Spending

Health expenditure is one of the major Government spending items, projected to grow from 4.2% in 2014-15 (or 16% of total Government spending) to 5.5% in 2054-55 (or 21% of total Government spending). Surprisingly, perhaps, the IGR shows that the main contributor to the increase is non-demographic, accounting for “around 80 per cent of the projected increase in real expenditure per person”. This is illustrated in the IGR’s Chart 2.11.
As listed on p. 61 of the IGR, some of the drivers of this expected trend include:

- increased appetite and income to consume higher quality health services;
- wage growth leading to price growth in health industries;
- changes in disease rates (such as increased prevalence of chronic health conditions) which increase demand for treatment;
- technological advances impacting on both price and demand.

As discussed previously, to understand the full extent of public health expenditure it is essential to perform a “whole-of-economy” analysis, including State government and non-government expenditures. Nevertheless, questions can already be raised from the above: is this sustainable, or are some aspects actually cyclical in nature? Given some of the above factors, what is the right level of public and private services? Are community expectations justified, or too high a threshold, and if it’s the latter how could it be managed?
Appendix A  Intergenerational Report Legislation

The Charter of Budget Honesty Act 1988 sets out the requirement for the production of an intergenerational report every five years and concisely dictates what it should contain:

Part 6—Intergenerational report

20 Public release and tabling of intergenerational reports

(1) The Treasurer is to publicly release and table intergenerational reports as follows:
   (a) the first intergenerational report is to be publicly released and tabled within 5 years after the commencement of this Act;
   (b) subsequent intergenerational reports are to be publicly released and tabled within 5 years of the public release of the preceding report.

(2) If:
   (a) an intergenerational report is publicly released within the period specified in subclause (1); but
   (b) a House of the Parliament is not sitting when the report is released;
   the report does not have to be tabled in that House until it next sits (or as soon as practicable after then), even if that is after the end of the specified period.

21 Contents of intergenerational report

An intergenerational report is to assess the long term sustainability of current Government policies over the 40 years following the release of the report, including by taking account of the financial implications of demographic change.
Appendix B  How the IGR was Built

In this Appendix, we describe the construction of the model underlying the IGR.

Overall Framework

The IGR projects Government revenue, expenditure and surplus for 40 years. Revenue is the Government’s share of GDP (mostly through taxation, including GST) and expenditure is the net cost of the Government’s spending commitments, including payments to the States (including passing on the GST).

Chart C.3 of the IGR illustrates the structure of the IGR projections.

Chart C.3  Preparing the fiscal aggregates

Importantly (and obviously), the projected revenue and expenditure are the outworking of both the model used and the assumptions adopted.
Revenue is based on the share of GDP represented by taxation receipts and other income.

Expenditure is based on the application of expenditure rules to the projected population, taking into account the expected inflation of the elements of cost.

Surplus is, simplistically, the excess of revenue over expenditure.

It is important to note that the IGR does not model the financial position of the States or of local government. This is significant, because our analysis of ABS figures suggests that these lower levels of government account for 48% of revenue raised by governments of all levels and 45% of expenditure.

For the first four years of the projection (up to 2017-18), the IGR relies on the forward estimates in the Federal Budget, as adjusted by the (then) most recent Mid-Year Economic and Fiscal Outlook (MYEFO). Thereafter, it uses a relatively simple projection.

The assumptions used in the IGR are stated as being consistent with the MYEFO, which includes projections extending to 2024-25.

**Forward Estimates**

The forward estimates are detailed “ground-up” projections that form part of the annual Budget. Technically, the first two years are described as “economic forecasts” and the following two years are “economic projections”, but both are considerably more detailed than the MYEFO and IGR projections made thereafter.

The forward estimates are amended in the MYEFO, which incorporates the latest data about the economy.

**Economic Growth Model**

The IGR takes a simple approach to projecting GDP beyond the forward estimates. In effect, it calculates GDP as:

\[
GDP = \text{number of hours worked} \times \text{production per hour}
\]

We have adopted the same approach in our own model, which we built to test the IGR and to investigate its meaning.

It is fair to say that the IGR’s economic growth model is, in real terms, a function of what it calls “the three long-run drivers of economic growth”, being population, participation in the workforce and productivity.

**Projected Revenue**

The IGR relies on the forward estimates for projected revenue up to 2017-18. Thereafter, with a short phase-in period, taxation revenue is projected to be a
constant 23.9% of GDP, including 3.4% of GDP for GST, as shown in Chart C.4 of the IGR (p113).

Although the levels are not exactly the same, this is consistent with the approach adopted in the three previous intergenerational reports.

Non-taxation revenue is projected to rise from 1.6% of GDP in 2014-15 to 2.5% in 2054-55.

The IGR (p. 81) discusses its rationale in some depth, but the reason for adopting a (nearly) constant ratio of GDP is that, despite some “modest” changes in the mix:

The overall level of Australian Government taxation has remained broadly steady as a share of GDP over the past 30 years.

Projected Expenditure

The IGR relies on the forward estimates for projected expenditure up to 2017-18. Thereafter, detailed models are used.

Table A.3 of the IGR (p. 100) sets out the components of expenditure as a percentage of GDP. We have derived the following chart from that table:
Health

The IGR uses component models to project Health expenditure until 2027-28. Thereafter, the aggregate expenditure is projected to grow increasingly rapidly, beginning at a non-demographic growth rate of 0.7% and rising to 2.9% by 2054-55.

Aged Care

As set out on p. 71 of the IGR, Aged Care expenditure is projected largely on the basis of the Government’s commitment to provide 125 aged care places per thousand people aged over 70. That represents a significant demographic driver of expenditure.

Age & Service Pensions

The IGR models Pensions allowing for stepped increases in the qualifying age for the Age Pension from 65 to 70 between 2017 and 2035. In line with proposed policy, the full pension increases in line with CPI up to 2028-29, when it reverts to AWE indexation. There are allowances for changes in the proportion of those over qualifying age receiving a part-pension or the full pension.

Income support payments

The IGR adopts detailed models for components of income support payments, including assistance to families and to those of working age.
Education

The IGR reflects Government policy that effectively maintains broadly constant expenditure on Education in real dollars per person. As the population is ageing, this means that the amount per student will increase slightly in real terms.

NDIS

The IGR allows for the Government’s NDIS expenditure to increase sharply as a percentage of GDP and then more gradually after about 2020.

Other modelled spending

Defence spending is projected to increase from 1.8% to 2% of GDP by 2023-24 and remain at that level thereafter, consistent with Government policy.

GST payments to the States are assumed to equal GST receipts.

Public sector superannuation is a relatively small component of expenditure and is expected to decline as a percentage of GDP because of the move away from unfunded defined benefit schemes to funded accumulation arrangements.

The IGR assumes that the Government will draw down from the Future Fund from 2020-21 onwards, to meet its annual unfunded superannuation payments. Because the Future Fund is “available to finance government liabilities” (p. 136) from then on, the IGR includes projected fund earnings in the underlying cash balance – presumably as negative expenditure.

Unmodelled spending

We note that, when interest is excluded, modelled payments represent around 80% of the total, so there must be some payments that can be described as “unmodelled”.

From Table A.3 of the IGR, we note that the IGR projects unmodelled spending to reduce from 5.2% GDP in 2014-15 to a flat 4.7% GDP by 2024-25, although the per-person cost does increase in real terms.
Appendix C Extracts from the Actuaries Institute’s Response to the IGR

In Section 3 of its response, the Actuaries Institute made six key recommendations in relation to IGR modelling:

1. Make the models more transparent and accessible
2. Clearly set out key assumptions and how and why they have changed since the previous IGRs
3. Set out the implications of key assumptions
4. Use graphs and tables to more clearly demonstrate the uncertainty around key assumptions
5. Clearly demonstrate and justify the impact of alternative policy settings through sensitivity tests
6. Include State government budgets to obtain a true national picture

In addition, the Institute said that the IGR should assess the impact of the projections on different age and social cohorts of the population to better understand intergenerational equity implications.

The submission also included (as Appendix A) the following commentary on the lack of explanation of changes in assumptions:

Several key assumptions relating to the projected GDP have changed quite significantly over the course of the last three IGRs, issued in 2007 ("IGR07"), 2010 ("IGR10") and 2015 ("IGR15").

Note that the charts in this Appendix are derived from rounded figures in tables printed in the three IGRs, so the precise shapes of projections may differ slightly.

Projected increases in longevity have been broadly similar in the three IGRs:

However, the fertility rate assumption increased significantly in IGR10 and the net migration ratio increased in both IGR10 and IGR15:
The net result is higher projected future population sizes in the later IGRs, coupled with lower aged dependency ratios\(^2\). The lower dependency ratios, in particular, tend to have a favourable impact on the financial projections.

The later IGRs have also assumed higher participation rates. Combined with larger and (relatively) younger populations, this leads to higher projected real GDP growth rates:

It is interesting to note that there is very little difference in projected long-term real GDP growth rates per person in the three IGRs. In effect, all of the additional growth comes from the higher population projections.

It is not absolutely clear how the revenue assumptions compare between the three IGRs, although it does seem that IGR15 assumes a higher rate of revenue (as a % of GDP) than IGR10, at least. Differences in projected financial outcomes between IGR07 and IGR10 appear to be driven by the higher population (and hence GDP) growth assumed in the latter. IGR15 would therefore be

\(^2\) Expressed in the traditional format of the number of persons aged 65+ divided by the number aged 15-64
expected to exhibit further improvement, but the different structural shape of expenditure dominates the comparisons:

The Institute considers that these simple comparisons demonstrate the need for more disclosure of the rationale for changes in assumptions and better analysis of the lessons learned from previous projections.