A review of the 2002 Intergenerational Report

Report by Access Economics Pty Limited for
Medicines Australia
TABLE OF CONTENTS

EXECUTIVE SUMMARY

1. Introduction ................................................................................................................. 1
2. The 2002 Intergenerational Report ............................................................................. 2
   2.1 The quantity challenges ahead ................................................................................. 2
   2.2 The relative price risks .......................................................................................... 2
   2.3 Criticisms of the 2002 IGR ................................................................................... 4
3. What has changed since the 2002 IGR? ................................................................. 5
   3.1 2007 update of the IGR picture .............................................................................. 5
   3.2 Policy change and the PBS ..................................................................................... 10
   3.3 Trends in PBS spending ......................................................................................... 12
4. Alternative projections for the PBS .......................................................................... 20
   4.1 Recreating the 2002 IGR view .............................................................................. 20
   4.2 Updating the IGR projections ................................................................................ 21
   4.3 Alternative historical growth rates ...................................................................... 24
   4.4 A reasonable central view ...................................................................................... 25
5. PBS outcomes and future fiscal pressures ............................................................. 27
   5.1 The 2002 IGR view ............................................................................................... 27
   5.2 The impact of alternative PBS projections ............................................................ 28
   5.3 The benefits of the PBS ......................................................................................... 30
6. Conclusions ............................................................................................................... 32

Disclaimer
While every effort has been made to ensure the accuracy of this document, the uncertain nature of economic data, forecasting and analysis means that Access Economics Pty Limited is unable to make any warranties in relation to the information contained herein. Access Economics Pty Limited, its employees and agents disclaim liability for any loss or damage which may arise as a consequence of any person relying on the information contained in this document.
CHARTS

Chart 1: Projected Federal deficit (% of output)  3
Chart 2: Comparison of ABS series II population projections  6
Chart 3: Recent participation and productivity trends  8
Chart 4: Changes to Federal Budget estimates since 2002-03  9
Chart 5: Total spending on PBS medicines  14
Chart 6: PBS scripts per person and quantity effects on cost growth  15
Chart 7: PBS cost growth per script and shares of total cost  15
Chart 8: Major medicines, share of total cost and contribution to growth  16
Chart 9: Cost per script of major medicines  17
Chart 10: Government PBS spending, 2006-07 Budget estimates  17
Chart 11: Key medicine groups: cost and volume growth  19
Chart 12: Economic and PBS projections – comparison with 2002 IGR  21
Chart 13: Updated economic assumptions – comparison of projections  22
Chart 14: PBS spending, updated alternative projections  23
Chart 15: PBS spending, alternative historical growth rates  24
Chart 16: PBS spending, central case projections  26
Chart 17: Government primary balance, comparison with 2002 IGR projections  27
Chart 18: PBS spending as a share of Federal Government expenses  28
Chart 19: Alternative PBS spending projections, effect on Federal Budget primary balance  29
Chart 20: Government primary balance, potential impact of improved health outcomes  30

TABLES

Table 1: Major patent expiries – 2004-2010  18
EXECUTIVE SUMMARY

Treasury’s 2002 Intergenerational Report (IGR) painted a bleak picture for government finances across the next 40 years. It suggested that demographic pressures brought on by the retiring baby boomers, combined with rapidly rising expenditure on government-subsidised pharmaceuticals and other health services, would inevitably lead to larger and larger budget deficits.

This report aims to explore the assumptions underlying the 2002 IGR projections, and to give an updated view of the future of the PBS by applying a similar methodology to more recent spending trends.

Since the 2002 IGR was released, some factors have improved the basic figuring on longer term fiscal finances, while others have worsened the outlook. In brief:

- **Demographic developments now imply a greater quantity challenge from ageing**, as the latest population projections show a greater increase in the numbers among the ‘frail aged’ than those underlying the 2002 IGR.

- **Economic developments have tended to improve the outlook**, as larger numbers of Australians are working than was previously predicted, and a commodity price boom has delivered a large boost to profit-related taxes.

- **Policy effects have had a mixed impact**, with a slowdown in PBS spending more than offset by higher spending in other areas and further tax cuts.

Offsetting that, however, has been a surge in discretionary Budget spending and tax cuts since the 2002 IGR was released. In the short term, these two trends have cancelled each other out, as tax cuts and spending have been offset by stronger tax revenues on the back of surging global commodity prices. In other words, while PBS spending is seen as a target for savings, other opportunities to further secure future fiscal sustainability may have been missed.

Small differences in the assumptions used to estimate future costs can lead to a very large difference in projected outcomes. Already a number of the assumptions that were used in the 2002 IGR have been revised, have exceeded expectations, or not met expectations.

Already noticeable changes have been seen in the path of PBS spending, with lower increases in pharmaceutical costs than expected in the 2002 IGR, combined with falling prices for pharmaceuticals already listed on the PBS.

While the IGR projections accounted for policy changes introduced as part of the 2002-03 Budget, no attempt was made to quantify their impact on long term cost growth. A range of changes to the PBS were made in the 2002-03 Budget and included in the IGR analysis. A number of important changes to PBS arrangements were announced with the 2002 IGR, and more have been introduced since, including:

- Education and compliance campaigns to reduce inappropriate prescribing practices and maintain the integrity of the scheme.

- A requirement that all new generic alternatives be listed at a price at least 12.5% less than their branded equivalents – which, in turn, leads to price reductions for all related pharmaceuticals.
Changes to co-payment and safety net arrangements designed to increase private contributions to the cost of PBS medications for patients.

Some medicines which had been driving PBS cost increases have recently had patents expire, helping to slow overall spending growth.

With similar assumptions to those in the 2002 IGR about growth rates in PBS spending from here on in, these changes would lead to different projections of the future of the scheme. But what if the PBS growth assumptions were also different?

This paper examines a number of reasonable alternative assumptions that could be seen over the coming years. These projections examine:

- Including recent lower growth rates in PBS spending in the period used to determine the average growth rate assumption used;
- Varying the length of the period average growth rate assumption used (a 22 year average was used in the 2002 IGR);
- Developing a ‘central case’ scenario with (1) non-demographic PBS cost growth through to 2009-10 as published in the recent Budget forward estimates, followed by (2) that growth returning to the 20 year average (calculated to the end of the forward estimates period) by the year 2021-22.

It rapidly becomes apparent that the choice of variable for cost growth (in Treasury’s terminology ‘non-demographic cost growth’) is the major determinant of the level of projected expenditure in the long term.

As rates of cost growth have changed significantly over time, the choice of which historical average to apply when calculating long term growth becomes paramount. When the effects of recent changes to PBS growth are included, projected PBS costs in 2041-42 are around 0.9 percentage points of GDP lower, a reduction of around 46% of the increase predicted in the 2002 IGR.

In other words, if the same methodology for projecting PBS costs is applied using updated data, then the results suggest that 46% of the projected relative growth in PBS costs in the 2002 IGR has already been countered by recent changes.

Even if current measures to constrain PBS growth lose their effectiveness over time, savings will still be significant – with fiscal pressures being reduced by roughly a quarter (from a 4% primary balance deficit in 2041-42 based on Treasury’s assumptions to around 3% in the central case presented here).

These projections show that close to half of the relative growth in the PBS predicted by the 2002 IGR may already have been prevented. That is no surprise – the ‘magic of compound interest’ means that early changes have ultimately magnified effects.

Indeed, even if current efforts to restrain PBS spending are allowed to wane over coming years, the future of the PBS now appears rather more secure than the original IGR had indicated.

Access Economics
6 September 2006
1. INTRODUCTION

The 2002 Intergenerational Report (IGR) identified a range of looming fiscal pressures facing the Australian Government as the population ages. At the time of the 2002 IGR, continuing rapid growth in government spending on the Pharmaceutical Benefits Scheme (PBS) was seen as a key challenge for coming decades.

In response to projections showing large increases in the relative cost of PBS medicines, the Government has since introduced a range of policies aimed at improving the long term sustainability of the scheme.

An update of the 2002 IGR will be released in 2007 with the upcoming Federal Budget. As noted in the following discussion, a variety of factors have changed in the intervening period. Importantly, the rate of PBS spending growth has slowed, whereas the discretionary spending by the Federal Government – notably including a series of tax cuts and family benefit increases – has been extremely rapid.

Medicines Australia asked Access Economics to consider these changes and examine a range of plausible alternative paths for the long term future of the PBS taking into account recent policy and spending trends.

This report presents the results of that analysis, which has been conducted using modelling methodologies similar to that used in preparing the original IGR projections.

The results here are not intended to represent a precise prediction of future spending. Rather, they are designed both to update the figuring behind the 2002 Report, and to highlight the uncertain nature of long term projections.

The remainder of this report is organised into five chapters:

- **Chapter 2** examines the long term challenges outlined in the 2002 IGR.
- **Chapter 3** takes a closer look at changes in the assumptions underlying the IGR projections, and discusses recent changes in the PBS.
- **Chapter 4** presents projections of PBS spending in coming years using a range of alternatives to the assumptions used in preparing the original IGR.
- **Chapter 5** considers the impact of alternative views of the PBS on the Budget bottom line, and highlights the potential benefits of improved health outcomes as a result of access to medicines.
- **Chapter 6** provides an overview of the projections and discusses the impact of recent data on PBS growth on the 2002 IGR projections.
The 2002 Intergenerational Report

Every society makes an intergenerational compact with itself. We tax workers to pay for subsidies to the young and the old.

Society subsidises investment in children by subsidising the education costs of children, and also their health costs. Society also subsidises retirement, by paying pensions to those with low incomes and by subsidising the healthcare costs of the ill and aged.

We pay for these subsidies to the young and the old by taxing the incomes of workers and there is therefore a budget government balance over the life cycle.

However, as the 2002 IGR effectively noted, Australia’s intergenerational compact with itself is at risk in coming decades:

- **First from a quantity challenge:** Australia’s ageing population means there will be a big increase in numbers of the aged relative to numbers of workers.

- **And second from a price challenge:** As the Australian Government heavily subsidises health spending for the aged, the fact that the cost of delivering health care has tended to rise over time relative to other costs in the economy means the potential for an additional strain.

So the 2002 IGR told Australians that, for this nation’s intergenerational compact with itself to be sustained, either tax rates on workers will have to rise, or subsidy rates and/or the level of services to the young and the old will have to fall – or some mix of those two.

The 2002 IGR estimated that, in the absence of such action, by 2041-42 Australia’s intergenerational compact with itself would be in the red to the tune of 5% of national output each year – more than $40 billion a year in today’s money.

### 2.1 The Quantity Challenges Ahead

On the quantity side, it is now well known that Australia has an ageing population structure, as rising life expectancy combines with the demographic bulge of the baby boomers to indicate that, in 40 years time, the number of Australians aged 85 and over will go up by a factor of 5. This is some 7 times for men, and 4 times for women (as relative life expectancy for men and women moves closer into alignment).

That quantity impact, other things equal, means that the pension and health care subsidies extended by society to the aged will pose a heavier burden in the future than they do at the moment. Indeed, the quantity shift ahead of us is larger still than that factored into the 2002 IGR, as the Bureau of Statistics has since released updated long term population projections. These updated projections indicate that the number of 85+ year olds in 2041-42 will be rather higher than the numbers assumed in the IGR.

### 2.2 The Relative Price Risks

Along with the change in the quantity demanded of various goods and services implied by an ageing population structure in Australia, there are also relative price effects at work.
The 2002 IGR noted that health care costs, which make up a large proportion of Australian Government subsidies to the aged (and other age groups), have tended to grow at a faster rate than economy-wide inflation in recent decades.

Or, in other words, the IGR foresaw both quantity and price effects as being expected to raise the cost of society’s subsidy to those in their ‘third age’, leading to large, rising and ultimately unsustainable Australian Government deficits. The IGR estimates of the worsening primary balance – that is, the Budget balance before allowance for interest payments on debt – are shown in Chart 1.

**CHART 1: PROJECTED FEDERAL DEFICIT (% OF OUTPUT)**

Implicit in the discussion in the 2002 IGR is that a deal-breaker is required so far as Australia’s current intergenerational compact between its citizens is concerned.

The 2002 IGR implies that if in the future we wish to sustain a new intergenerational compact, it will have to involve either reduced services per person relative to national output per head, or average rates of tax will need to rise.

As also shown in Chart 1, the 2002 IGR noted that the implication of these demographic trends was that the Australian Budget balance would get better before it got worse. In particular, participation rates may initially rise if the matured-aged work for longer (cutting expenses as a share of national output), while there may also be savings on education and other youth-related spending as numbers of young Australians remain relatively stagnant in the coming decade.

However, the 2002 IGR pointed to the eventual emergence of what may eventually become very large Australian Government primary deficits (fiscal deficits less net interest costs) if action is not taken to counteract that.
2.3 CRITICISMS OF THE 2002 IGR

It is worth reviewing some potential criticisms of the 2002 IGR:

- **The first** key criticism is that, although a quantity effect of population ageing on the relative number of aged Australians in coming decades is clear enough, the assumption that the past increase in the relative costs of health will continue into the future may not hold true. In effect, some critics have argued, health care technology and management practices may stem or even reverse the tide in the relative rise in health care costs to governments and the wider society.

- **A second** key criticism is that, apart from quantity and price effects, it tended to ignore a key income effect. In particular, continued productivity growth could raise average incomes in Australian society well above today’s levels, meaning that any need to raise tax rates to pay for a rising number and relative cost of the elderly would be easily achievable.

- **A third** criticism is that the IGR fails to take into account the potential effect on future Australian Budgets of political pressures from the ageing baby boomer generation for relatively higher age pensions and other spending.

- **A fourth** criticism is that the IGR focuses on the Australian Budget, with the success or failure of any policy change being judged by its impact on the Budget alone. But shifting costs to the States or to households does not really deal with emerging costs of an ageing population – it merely shifts the responsibility for paying for these costs.

- **A fifth** criticism is that the IGR does not take into account ‘feedback loops’ in a range of areas, including health and medicines spending, where growth in one variable would influence the growth in other variables in the model. For example, potential offsetting savings in other parts of the health sector as a result of spending on new medicines are not taken into account, such as lower hospitalisation levels.

That said, it should be noted that the modelling behind the original IGR has been designed with the clear aim of identifying pressures on the long term sustainability of Federal Government finances, a task to which it is well suited.

When projecting uncertain trends over long periods of time, the simple assumptions made in the IGR make for more transparent results, placing the impact of future trends in a wider context and highlighting broad pressures on fiscal sustainability over coming decades.

However, the 2002 IGR highlighted that such assumptions can themselves be crucial to the conclusions of any long term fiscal analysis. By relying on historical trends to inform future growth in the PBS, the original IGR projections now also ignore a range of more recent policy changes, and make no attempt to estimate the impact of future patent expiries for major medicines.

**The upcoming second IGR can be expected to address some of these issues, but long term projections of PBS spending are likely to remain a difficult task, highly dependent on relatively few assumptions.**
3. WHAT HAS CHANGED SINCE THE 2002 IGR?

A number of factors have changed since the 2002 IGR – some in a manner that aid the longer term outlook for the economy and the Budget, and some that worsen that outlook.

Spending on the PBS was growing fast at the time Treasury developed the 2002 IGR, and policy measures to ensure the sustainability of the PBS scheme were in their infancy. That rapid growth in PBS spending created a backdrop to the view of future PBS spending pressures that Treasury outlined in the 2002 IGR.

In many ways, the mechanical approach adopted by Treasury of using historical growth rates to predict future ones was (and is) the correct one. It recognises the uncertain nature of long term projections, and ensures that the modelling is as transparent and ‘arms length’ as possible.

However, taking fiscal trends at face value places particular importance on the starting points used in considering Australia’s fiscal future.

Such starting points can have a large impact on the final results of long term projections, particularly when 40 years of compounding are at play. Such starting points and trends in spending are an important part of the IGR picture, and need to be considered carefully and updated over time.

This need to review the estimates of long term future of government finances was acknowledged in the Charter of Budget Honesty under which the first IGR was prepared. The Charter calls for an intergenerational report to be prepared every five years, which is why the next IGR is due for release with (or ahead of) the 2007-08 Federal Budget.

The next IGR will update the starting points used in preparing the 2002 report, and provide an indication of how recent changes have affected the predicted burden on public finances.

In this section, we examine some of the changes which have occurred since the original IGR was released, particularly in relation to spending on PBS medicines. The aim is to highlight the new starting points which will form part of the next IGR, and to outline how the recent past has had an impact on our fiscal future.

3.1 2007 UPDATE OF THE IGR PICTURE

Since the initial Report was released in 2002, some factors have improved the basic figuring on longer term fiscal finances, while others have worsened the outlook. In brief:

- **Demographic developments now imply a greater quantity challenge from ageing**, as the latest population projections show a greater increase in the numbers among the ‘frail aged’ than those underlying the 2002 IGR, while birth rates have stabilised at better-than-expected rates.

- **Economic developments have tended to improve the outlook**, as larger numbers of Australians are working than was previously predicted, and a commodity price boom has delivered a large boost to profit-related taxes.

- **Policy effects have had a mixed impact**, with a slowdown in PBS spending more than offset by higher spending in other areas and further tax cuts.
DEMOGRAPHIC DEVELOPMENTS SINCE THE 2002 IGR

When compared with those underlying the 2002 IGR, more recent population projections show an increase in absolute numbers of older Australians, but a decline in the relative ageing of the population.

At the time of the 2002 IGR, falling birth rates and increased life expectancy were expected to lead to significant demographic pressures – with the growth in workers lagging well behind growth in those not working.

ABS population projections released in the year 2000 had indicated that the number of Australians aged 85 and over would more than triple by 2041-42. The implication was that in the 2040s there would be 2.4 Australians of working age for every person aged 65 and over.

Although the Treasury used its own demographic model in the 2002 IGR, its figuring was essentially similar to the ABS estimates of 2000.

Since the IGR was released, the ABS has twice published updated population projections, with both revisions including significant changes to the long term underlying assumptions. The current ABS expectations show a number of changes:

- **Birth rates** are now projected to stabilise at a higher rate than envisaged in 2000, leading to an increase in projected population among younger age groups.
- **Life expectancy** continues to rise at a faster rate than expected, leading to a rise in projected numbers of older Australians, particularly among those aged 85 and over.
- **Official migration** targets also continued to rise, adding to the expected number of working aged Australians.

A comparison of the figures is shown in Chart 2.

**CHART 2: COMPARISON OF ABS SERIES II POPULATION PROJECTIONS**

The left panel of Chart 2 compares the projected number of Australians aged 15 to 64 (the ‘working aged’), and those aged 85 and over (the ‘frail aged’). These projections are shown relative to the Australian population in these age groups, with 100 representing the population in the year of the original IGR.
The latest figures show a larger increase in the number of Australians aged 85 and over. At the time of the 2002 IGR, ABS projections showed close to a four-fold increase in this group, while more recent projections have suggested a greater increase – rising more than five-fold over coming decades.

However, the right panel of Chart 2 shows that the later projections suggest a slightly more positive outlook for the ‘intergenerational compact’, because the increase in the expected levels in the younger age group is large enough to offset faster growth among older age groups, reducing the projected ‘aged dependency ratio’ somewhat.

**ECONOMIC DEVELOPMENTS SINCE THE 2002 IGR**

- **On balance, higher participation rates have outweighed slower productivity growth, leading to higher real output.**
- **In addition, a leap in commodity prices has meant that nominal output has been even higher still.**
- **If these gains are maintained, then the economic projections in the original IGR may prove to be on the conservative side.**

Each of the ‘three Ps’ identified as crucial to long run economic prospects have seen a variety of changes since the initial IGR report was released. The first, population, has been discussed above. In addition, since 2002:

- **Participation has seen strong gains**, outpacing the assumptions underlying the IGR projections. In particular:
  - **Teenagers** have increased their workforce participation. Participation in this age group was expected to fall slightly over coming decades, although it may still do so.
  - **Younger workers** (those in their early twenties) have seen slight falls in participation rather than the modest gains than the IGR predicted, in part reflecting a greater increase in educational commitments.
  - **Older workers** have produced the biggest surprise, with the last four years seeing a dramatic acceleration in the number of Australians choosing to work longer rather than opt for an early retirement. As Chart 3 shows, for workers in their sixties the gains since 2002 have already exceeded the gains anticipated for the 40 year horizon.

- **Productivity growth has faltered slightly** in recent years – failing to meet the benchmark assumed in the IGR. There is a risk that ‘reform fatigue’ could keep productivity growth, on average, below that benchmark.
While the outcomes of the past four years are over a far shorter period than the projected changes in the 2002 IGR, they mean that a significant proportion of the predicted long term gains in output due to participation have already been achieved (whereas gains due to productivity growth have not been achieved).

**CHANGES TO GOVERNMENT REVENUES AND SPENDING SINCE THE 2002 IGR**

While surging company taxes have served to strengthen the medium term Budget position, offsetting changes to policy have meant little improvement in the Budget surplus since the original projections were released.

When Treasury prepared the first IGR in 2002, it focused on the likely impact of ageing and the rapid pace of cost growth in health on government spending.

In contrast, it assumed no change in government policy and that taxes would remain a constant share of the economy.

Since the 2002-03 Budget, revenues have been growing rapidly, riding a mining-led boom in corporate profits (and resulting in corporate tax). In fact, the underlying position of the Federal Budget has been revised upward no less than eight times since the IGR was released.

These revisions have resulted in an *economy-driven* net revenue gain since the 2004-05 Budget of $47 billion for the 2006-07 financial year, as shown in Chart 4.

However, spending and tax cuts announced since the IGR have been considerable. There has been a *policy-driven* revenue cost, with a series of cuts to personal income tax and continued strong growth in new spending largely offsetting the increased revenues and lower welfare payments delivered by the strong economy.

Indeed as Chart 4 shows, government policy decisions since the 2002-03 Budget are now running at a cost of more than $46 billion a year, or some 4½% of GDP.
In the short term, these two trends have cancelled each other out, as tax cuts and spending have been offset by stronger tax revenues on the back of surging global commodity prices.

However, recent policy changes are a greater concern going forward, as corporate taxes may wane if commodity price gains prove to be rather shorter-lived than the demographic challenges Australia faces.

Indeed, the OECD’s 2006 Economic Survey of Australia noted that commodity prices had delivered an additional 1¾% of GDP in revenues to the Government in 2005-06 – the equivalent of an $18 billion hole in the Budget once commodity prices return to their longer term average (see the discussion at page 34).

And, adding to longer term fiscal risks, some other policy changes will become more costly over time. For example, petrol excise is no longer indexed to inflation1, and the foreshadowed removal of taxes on super benefits appears likely to have a growing impact on the total tax take.

---

1 This decision was taken prior to the 2002 IGR, but the latter simply assumes revenues are a constant share of national income.
3.2 POLICY CHANGE AND THE PBS

A number of important changes to PBS arrangements were announced with the 2002 IGR, and more have been introduced since, including:

- A requirement that the first new generic brand in each pricing group be listed at a price at least 12.5% less than the brand equivalent – this then flows on to all other products in the same group.

- Changes to co-payment and safety net arrangements designed to increase private contributions to the cost of medication for some patients.

- Education and compliance campaigns to reduce inappropriate prescribing practices and maintain the integrity of the scheme.

While the IGR projections accounted for policy changes introduced as part of the 2002-03 Budget, no attempt was made to quantify their impact on long term cost growth. More importantly, changes announced since the release of the IGR were not envisioned at the time, and so not included in the analysis. These have the potential to significantly alter the expected future growth of PBS spending.

With a range of measures already in place, there is a case for evaluating the effect of recent policy decisions on PBS growth.

When the IGR was released in 2002-03, it was accompanied by a range of Budget measures aimed at restraining rapid growth in PBS spending over time.

- **Compliance and education measures**, aimed at reducing volumes of PBS medicines provided. These included:
  - Removing scripts received less than 20 days after a previous script was filled from the safety net arrangements. This change was designed to stop patients requesting scripts early in order to accelerate their safety net entitlements.
  - Education campaigns to reinforce a focus on evidence based medicine, and reduce rates of inappropriate prescribing.
  - Efforts to curb ‘doctor shopping’ behaviours.
  - Measures to curb pharmacy fraud.

- **A tightening of ‘restricted benefit’ rules**, to ensure that PBS medicines with higher costs than alternative treatments are not prescribed as a ‘first line of defence’.

- **Increased patient co-payments**, thereby increasing the share of PBS funding provided by consumers (and hence the ‘private price’ to consumers).

In preparing the original IGR, the Federal Treasury included the estimated effect of these changes by using the Budget’s forward estimates of PBS spending in 2005-06 as the starting point for the long run projections. Historical growth figures were calculated on the basis of this reduced estimate.

In other words, many of the changes outlined above had an impact of starting levels of spending, but the impact on the growth estimate used in the 2002 IGR was diluted by including historical data in the averages used.
Since the 2002 IGR projections were prepared, a number of new policies have been implemented to further constrain PBS costs. These policies were not envisioned at the time of the 2002 IGR, and therefore do not form a part of the projections of PBS spending. They include:

- **Automatic price reductions for generic medicines.** Since 1 August 2005, the first new generic brand in each pricing group has been required to list at a price at least 12.5% less than the brand equivalent – this reduction then flows on to all other products in the same group.

- **A reduction in wholesale margins** applying to PBS medicines, negotiated under the new Community Pharmacy Agreement. Wholesale margins will fall from 11.1% to 7.5% under the new agreement, which expires in 2010.

- **Increases in safety net thresholds** by two scripts per year over four years. This will reduce the number of scripts provided at reduced co-payments under the PBS safety net rules.

- **Increased use of risk sharing agreements** has been used to effectively ‘cap’ government spending on individual medicines or in therapeutic areas. These agreements have protected the budget from growth in PBS spending. Any excess over the cap is at least partially reimbursed by the company which produces the medicine.

Making predictions of the impact of these changes on future PBS costs is difficult, but some of these existing changes have the potential to make a major difference over time. Such policies may prove to be more successful than first thought, as ‘ripple effects’ drive down general PBS prices in response to specific market changes.

Such effects are a result of the way in which prices for PBS medicines are set, which includes the application of some key pricing and listing principles:

- **‘Cost plus’ pricing**, which uses cost data supplied by producers and a specific regulated mark-up to set prices.

- **Reference pricing**, which links the price of each medicine in a group that provides the same therapeutic benefit to the price of the cheapest medicine in that group. There are currently 108 reference pricing groups, which relate prices for a large number of medicines. In some cases this is as simple as setting equal prices for similar medicines, but the design of the PBS allows for a range of special cases:
  - Where a medicine is proven to offer either a therapeutic advantage over alternative treatments (such as fewer side-effects, or an alternative form of delivery), that medicine may be listed at a higher price than others in its group.
  - For seven key groups of medicines a separate reference pricing process known as Weighted Average Monthly Treatment Cost (WAMTC) applies. Data on the volume of PBS prescriptions for medicines in the group is combined with dosage data to determine average monthly treatment dosages. This dosage data is then combined with prices to determine the lowest cost medicine in the group, and to estimate 95% confidence intervals around the monthly cost of this medicine. If costs for other medicines lie outside these bounds, then they are reduced so that their price is not statistically different from that of the lowest price medicine in the group.

\[\text{The lowest price drug in this calculation is in fact that with the lowest upper 95\% confidence interval.}\]
These pricing arrangements mean that when the subsidised price of a medicine listed on the PBS changes, for example as a result of a new generic alternative, there are processes in place to reduce the prices of related medicines.

By applying these principles, the PBS is already well placed to maximise the benefits of existing policy changes. Current listing arrangements also ensure that any increase in the cost of the scheme is offset by genuine increases in the effectiveness of pharmaceutical treatments available to the public.

In other words, a range of PBS policy ‘levers’ have already been pulled. Under the current PBS arrangements those ‘levers’ have the potential to effect the future costs of a range of medicines, magnifying the future impact on government costs under the PBS.

3.3 TRENDS IN PBS SPENDING

Spending on pharmaceuticals under the PBS has been rising rapidly as a share of national income for more than a decade. The equity focus of the PBS has shielded consumers from the impact of that rise by pushing much of the cost increase onto the Australian Government.

The result has been a significant increase in government spending on PBS medicines, an increase that was highlighted as a key potential pressure on future taxpayers in the 2002 IGR.

The 2002-03 Budget estimates predicted that PBS spending growth would slow. That slowdown has since occurred and has in fact been more marked than expected at the time, meaning PBS growth rates have been below the long run assumption used in the IGR every year since 2002.

Indeed, the latest figures reveal that government PBS spending rose by 2.0% in the last financial year – a fall in real terms.

LONG TERM GROWTH IN THE COST OF THE WIDER HEALTH SECTOR

Over time, the share of health financing applied to the institutional sector (hospitals, nursing homes) has fallen, while the share applied to the community sector, especially MBS and PBS, has risen. The important driver of this is technological change.

Pharmaceuticals are displacing other sorts of treatments while, even within surgery, the typical episode of care now has a greater component of medical services and a smaller component of other hospital services (nursing, accommodation, meals) than used to be the case.

The average length of stay in hospitals has been reduced dramatically, there has been a huge productivity gain as a result, and hospitals are producing a great many more episodes of care for not such a large increase in funding. (They remain under pressure partly because patient expectations have risen strongly.)

The technological rate of change within health appears to be speeding up, and this creates considerable difficulties for health cost forecasters. While the new technologies (such as gene therapy) may appear to offer so much, the cost per patient can be very high.
(although, again, technological gains may bring these prices down sooner than we might have expected from past experience).

Were some of the mooted pharmaceutical treatments proven to be effective, many health problems would be prevented. There would therefore be a substitution effect, with pharmaceuticals and community-based medical care displacing in-hospital treatment.

That improvement in the overall health of the health sector would show up as an increase in PBS spending – because that increase would be warding off spending elsewhere in the health sector.

At one end of the spectrum, there are predictions that new technologies in pharmaceutical and other treatments will produce such large gains in health status that the ratio of health spending to GDP will fall in coming decades. If these predictions came true, most health problems would be solved by pharmaceuticals, few patients would see the insides of a hospital – and the health financing burden of the Federal and State Governments would ease rather than rise (in relative terms).

At the other end of the spectrum, there are predictions that health spending to GDP will rise rapidly with ageing. These sorts of projections usually are based on a stable technology (in effect, what we have now).

Quality change is also quite difficult to assess. One way to put a finger on the difficulty is to consider the different ways that technological advances can influence service delivery:

- Some technological changes involve finding better ways to carry out a procedure, perhaps better techniques, better equipment, better anaesthetics, better diagnosis which may be supported by diagnostic tests (imaging or pathology) – yet underneath, it is still essentially the same procedure;

- Some involve substitution of alternative procedures, for example a surgeon may use a laparoscopic or small incision technique in place of highly invasive, large incision techniques. Similarly, a patient with blocked arteries may be treated by angioplasty (balloon technique) rather than complex and costly by-pass surgery. In both of these examples, the substituted procedure is more comfortable, perhaps safer, for the patient, and reduces overall episodic costs. There are other examples where the alternative procedure is more costly overall, but may be undertaken because it improves the expected outcome; while

- Others involve substitution of an entirely different type of treatment, eg, an MRI scan in place of investigative surgery, a pharmaceutical treatment for a stomach ulcer in place of a surgical procedure, and so forth.

There has been an observed drift to more complex, more costly services. It is evident in the hospitals and it is evident in Medicare. When savings have been achieved through productivity gain, there has been a tendency on the part of Australians to take the ‘dividend’ in the access to additional health care and more technological advanced health care, rather than as a boon to the taxpayer.
LONG TERM GROWTH IN THE COST OF THE PBS

As Chart 5 shows, growth in the total cost of the PBS has comfortably outpaced the wider economy since the early 1990s. This period of sustained cost growth has seen the PBS has more than doubled as a share of national income in the space of a decade. Over that time, PBS subsidy arrangements have ensured that private costs have remained relatively steady, leaving the Federal Government to bear the bulk of the cost increase.

However, increased PBS subsidies are not simply the result of higher prices for medicines. Quality has risen fast as well. Long term trends show that the scheme is providing better access to a wider range of medicines over time.

It is important to note that this trend toward higher health care costs as new medical advances become available is not unique to the PBS. Health care costs in a range of areas have been growing as a share of the economy over recent decades. In effect, new technologies and medicines have delivered more and better health care at a higher cost.

After all, while the cost of health has been making headlines, there are few signs that we are prepared to compromise on the quality of health care to cut corners on costs, and higher incomes lead to higher demand for state-of-the-art health care. Spending on health care tends to rise alongside income – the better off we are, the larger the share of our income we are willing to pay for our health care.

That desire tends to lead to increased quantities of care over time, and the PBS is no exception. Chart 6 shows a key driver of PBS costs – the number of scripts per Australian – has also seen a long term lift.
As the range and quantity of medicines demanded by the community has grown, the result has been a significant increase in the overall cost of the scheme. Chart 6 shows that growth in the number of scripts provided (‘quantity’) accounts for a significant proportion of the overall increase in spending on PBS medicines. Changes in the composition of the scheme have also played a role in driving unit cost growth, by shifting quantities over time in favour of newer medicines with higher existing costs per script.

Current PBS arrangements are designed to provide low cost access to medicines for all Australians. That policy aim means that medicines provided under the scheme attract a high level of subsidy, and that increases in cost often have little or no impact on the contribution of individuals to their own treatment costs.

 Adding to the pressure on government spending, an increasing proportion of PBS medicines have been provided on a concessional basis over time, further constraining the private contribution to treatment costs. In 2004-05, 83.1% of scripts were provided under concessional co-payment rules, up from 79.3% in 2000-01. Some 61.9% of PBS scripts were provided to individuals with health or pension concession cards, while a further 21.2% were provided at a reduced co-payment under the safety net rules.

As Chart 7 shows, the result of these arrangements has been an increasing share of PBS funding falling to government over time. This relative funding shift has seen government costs rising faster than total PBS spending over recent decades.
THE ROLE OF MAJOR MEDICINES

While the PBS scheme covers more than 600 different medicines, a small number of medicines account for a significant share of the total cost of the scheme. Since the release of the 2002 IGR projections, much has been made of the role of such ‘blockbuster’ medicines in driving increases in the cost of the PBS.

In terms of government PBS subsidies, the five most costly medicines in every year between 2001-02 and 2004-05 were atorvastatin, simvastatin, omeprazole, olanzapine and the combination of salmeterol and fluticasone.

As Chart 8 shows, these five medicines account for close to one quarter of all government PBS funding. These medications represented more than 10% of all PBS scripts over this period, while the 10 most costly medicines made up more than 16% of the total.

**CHART 8: MAJOR MEDICINES, SHARE OF TOTAL COST AND CONTRIBUTION TO GROWTH**

While these medicines accounted for a significant share of government spending, the impact of major medicines on cost growth has been mixed in recent years. Chart 8 shows that the share of recent PBS cost growth which can be attributed to the five most costly medicines has fallen since the IGR was released.

In 2002-03, 36% of the total increase in government cost was due to increases among the top 5 medicines. More recently, that share has fallen to 20% – below the 23% share of spending on this group in 2004-05. On the other hand, the share of cost increases among the top 10 medicines rose from 43% to 54% over the same three year period.

While drawing conclusions from short run trends is difficult, the most recent figures show the top five medicines, while making up a significant proportion of total PBS costs, have been less important in driving growth in those costs in recent years. Unit cost growth in particular has been subdued among this group, with increased quantities driving the majority of recent cost increases. This may be an indication of a changing of the guard for PBS spending growth, as the use of new medicines becomes more widespread while existing ‘blockbuster’ medicines are close to peaking.

It is important to note that increases in total PBS costs per script are not simply the result of changes in the price of individual pharmaceuticals, but of changes to the average cost of PBS medicines. Chart 9 shows that the highest total cost medications also have higher unit costs, meaning any increase in the relative quantity of these medicines results in an increase in unit costs for the scheme as a whole.
Chart 9 shows that unit cost increases among the top 5 medications were significantly less than growth in unit costs for the PBS as a whole, and below economy-wide inflation.

In part, small price changes for the most costly PBS medications reflect the focus of government policy. Costly medicine groups are subject to a variety of additional price controls, such as reference pricing arrangements based on Weighted Average Monthly Treatment Cost, which have served to constrain growth in average prices in recent years. Such trends are being reinforced by the new 12.5% price reduction for new generic medicines, which may lead to larger and faster reductions in price for future ‘blockbuster’ medicines.

**SHORT-TERM SPENDING TRENDS**

While growth in PBS spending has been rapid over the past decade, the recent data have shown a moderation in that trend. Indeed, as Chart 10 shows, few recent years have matched the long run average identified by the 2002 IGR. Not surprisingly, official estimates published in the 2006-07 Budget have also seen expectations of spending growth reduced.

---

3 While there were no changes in the price of individual items listed on the PBS from among this group of medicines, changes in the average dosage prescribed can alter the average cost per script.
As a result, growth in spending on PBS medicines as a share of national output has also slowed considerably, and fell slightly in 2004-05. Relative PBS spending is not expected to match past rapid rises in the near future.

If these recent estimates prove accurate, only two of the last 13 financial years will have seen PBS growth match or exceed the 11.57% cost growth assumed in the IGR projections. It is worth noting that the two exceptions, the 1999-00 and 2000-01 financial years, saw the listing of both Celecoxib and Rofecoxib for the treatment of arthritis at a combined cost of $226 million (or more than 5% of total PBS costs).

However, government PBS spending figures for the 2005-06 financial year have shown a sharp slowdown, with total cost growth of 2.0% over 2004-05. As Chart 6 above shows, growth slowed in costs per script, while the number of scripts actually fell.

This latest slowdown in PBS spending growth sees increases running at less than the rate of general inflation, which stood at 2.8% in the year to June 2006. In other words, the real cost to government of the PBS contracted in the last financial year.

Over the coming five financial years, PBS spending will be affected by a number of patent expiries for key medications. Table 1 shows a summary of major pharmaceuticals expected to come ‘off-patent’ by the end of this decade.

<table>
<thead>
<tr>
<th>Brand name(s)</th>
<th>Generic name</th>
<th>Medicine type</th>
<th>Expiry date</th>
<th>PBS cost 2004-05($)m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aropax</td>
<td>Paroxetine Hydrochloride</td>
<td>Depression</td>
<td>February 2004</td>
<td>55.3</td>
</tr>
<tr>
<td>Zocor, Lipex</td>
<td>Simvastatin</td>
<td>Cholesterol</td>
<td>July 2005</td>
<td>390.3</td>
</tr>
<tr>
<td>Zoloft</td>
<td>Sertraline</td>
<td>Depression</td>
<td>October 2005</td>
<td>94.8</td>
</tr>
<tr>
<td>Seretide</td>
<td>Fluticasone</td>
<td>Asthma</td>
<td>February 2006</td>
<td>25.1</td>
</tr>
<tr>
<td>Pravachol</td>
<td>Pravastatin</td>
<td>Cholesterol</td>
<td>June 2006</td>
<td>125.9</td>
</tr>
<tr>
<td>Monopril</td>
<td>Fosinopril</td>
<td>Blood pressure</td>
<td>November 2006</td>
<td>17.1</td>
</tr>
<tr>
<td>Ramace, Tritace</td>
<td>Ramipril</td>
<td>Blood pressure</td>
<td>April 2007</td>
<td>69.6</td>
</tr>
<tr>
<td>Norvasc</td>
<td>Amlodipine</td>
<td>Blood pressure</td>
<td>February 2008</td>
<td>63.4</td>
</tr>
<tr>
<td>Serevent</td>
<td>Salmeterol</td>
<td>Asthma</td>
<td>April 2008</td>
<td>185.5</td>
</tr>
<tr>
<td>Betaferon</td>
<td>Interferon beta-1b</td>
<td>Multiple sclerosis</td>
<td>October 2008</td>
<td>38.9</td>
</tr>
<tr>
<td>Efexor</td>
<td>Venlafaxine</td>
<td>Depression</td>
<td>December 2008</td>
<td>100.1</td>
</tr>
<tr>
<td>Nexium</td>
<td>Esomeprazole</td>
<td>Peptic ulcers</td>
<td>March 2009</td>
<td>157.3</td>
</tr>
<tr>
<td>Lexapro</td>
<td>Escitalopram</td>
<td>Depression</td>
<td>June 2009</td>
<td>24.4</td>
</tr>
<tr>
<td>Zoton</td>
<td>Lansoprazole</td>
<td>Peptic ulcers</td>
<td>September 2009</td>
<td>42.0</td>
</tr>
<tr>
<td>Somac</td>
<td>Pantoprazole</td>
<td>Peptic ulcers</td>
<td>January 2010</td>
<td>114.0</td>
</tr>
<tr>
<td>Zanidip</td>
<td>Lercanidpine</td>
<td>Blood pressure</td>
<td>February 2010</td>
<td>25.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$1,528.7m</strong></td>
</tr>
</tbody>
</table>

These medications represented more than one quarter of PBS subsidies in 2004-05, with many having played an important role in the past rapid growth of the scheme. As Chart 11 shows, major groups of medicines often experience periods of rapid cost growth as they gain acceptance from doctors and patients, followed by a slowing after most of the potential treatment population is reached.

While many of the medicines listed above have already seen price reductions as a result of generic competition among other medications in their reference pricing group (and have
therefore already faced price reductions as a result of the government’s recent 12.5% price reduction policy), generic competition will create new pressure on the pharmaceutical industry to reduce the cost of medications in the future.

**Chart 11: Key medicine groups: cost and volume growth**

Just as some medications will see slower growth after their patents expire, it is important to recognise that new treatments currently in the development pipeline will also play a role in determining the future cost of the PBS.

The likely number and impact of new medicines listed on the PBS is difficult to gauge at present, and will depend on a range of factors. As a result, trends in the development and approval of pharmaceutical products represent a key uncertainty for the future of the scheme.
4. ALTERNATIVE PROJECTIONS FOR THE PBS

When you make assumptions about trends that compound for forty years into the future, then relatively small changes in those assumptions can have relatively large impacts on the results.

It is, of course, very hard to predict future trends in PBS costs to the Government on current policies – the range of potentially possible outcomes is very wide.

The aim of this chapter is to consider a range of possibilities, including the assumptions made by Treasury in the original IGR, indicative updates to those forecasts (using broadly similar assumptions but including more recent data in the analysis) and a variety of alternative possible outcomes in demographics and health costs.

THE NATURE OF THE PROJECTIONS

There are significant difficulties in predicting future pharmaceutical trends.

In a model such as this, covering an intergenerational forecast period, the model will almost always ignore short-term cycles in demographic, economic and price trends. It will broadly ‘set the helm’ over the first few years, and then examine where those initial assumptions lead over the long term.

In reality there will be years of stronger and weaker price growth, higher and lower migration and rising and falling birth rates. In addition, some initial conditions will reach a point of unsustainability in the medium term, although the model will allow the situation to persist long beyond when real-world considerations would force some type of policy response.

The modelling here is not attempting to create a scenario that is ‘more correct’ than that determined in the IGR. The scenarios examined will, however, highlight the sensitivity of the results to the assumptions made within.

The results are therefore both disturbing and encouraging – as they show the depth of the challenges we will face over the coming decades, but also how relatively modest policy changes can have a significant ameliorating influence on the outcomes.

4.1 RECREATING THE 2002 IGR VIEW

The first step in examining alternative projections for future PBS costs is to calibrate Access Economics’ IGR model results to those Treasury obtained in its 2002 IGR. This ensures that the results that follow are constructed in a way which is broadly comparable with past official projections.

As the following chart shows, when similar modelling assumptions are used, Access Economics’ IGR model produces economic growth projections very similar to those in Treasury’s 2002 IGR.
This is also true of projections of spending under the PBS. With identical starting points, and assumptions about future spending growth, the two models produce very similar results for future PBS subsidies.

While every effort has been made to project outcomes on a similar basis to those presented by Treasury in the 2002 IGR, there are some factors which drive the recreated model’s projections in this model away from the Treasury IGR results:

- Many of the values published in the Treasury IGR are rounded to one decimal place, with only period averages provided. The Access Economics model is calculated for each financial year – with averages calculated subsequently. There will therefore be differences in any derived results based on these more accurate figures.

- There will be minor differences in participation rate estimates by age as the IGR did not provide these on an annual basis, except in a number of charts which we have extracted data from.

- The IGR may well have included short-term adjustment factors that were not explicitly noted or quantified in the report.

4.2 UPDATING THE IGR PROJECTIONS

Despite the caveats noted above, the results of the Access Economics IGR closely mirror those included in the Treasury’s initial report. Updating the modelling, however, introduces a number of changes that significantly alter both the starting point and outlook for PBS expenditure in the model:

- Including updated ABS population projections has an effect on the demographic changes in the modelling due to changed assumptions on birth and mortality rates as well as level of migration into Australia.

- The release of more recent historical data means that starting points for many of the variables included in the modelling have changed since the 2002 IGR was prepared, including some that have deviated significantly from earlier projections in the interim.
A more complete macroeconomic framework, including a more detailed dissection of productivity gains means that the projections presented here include slightly different economic results.

Chart 13 shows forecast growth in PBS spending (as a share of output) from both the model used for this project and an approximation of the Treasury model used to prepare the 2002 IGR projections.

**Chart 13: Updated Economic Assumptions – Comparison of Projections**

<table>
<thead>
<tr>
<th>Year</th>
<th>2002 IGR</th>
<th>Baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000s</td>
<td>3.0%</td>
<td>2.5%</td>
</tr>
<tr>
<td>2010s</td>
<td>2.5%</td>
<td>2.0%</td>
</tr>
<tr>
<td>2020s</td>
<td>2.0%</td>
<td>1.5%</td>
</tr>
<tr>
<td>2030s</td>
<td>1.5%</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

**2002 IGR:** Federal Treasury’s projections as seen in the 2002 Intergenerational Report

**Baseline:** Access Economics’ projections using updated economic assumptions

As a result of the updates to economic projections outlined above, Access Economics’ ‘baseline’ scenario projects slightly higher rates of real economic growth over coming decades. These higher rates of economic growth result in a larger national ‘pie’, reducing the relative burden of PBS costs on future taxpayers.

Our modelling presents a slightly more optimistic view of the future of the PBS, as well as other fiscal trends.

There are ‘savings’ relative to the expectations in the original 2002 IGR, mainly because the economy itself is expected to be stronger thanks to higher participation and lower unemployment than is assumed in the 2002 IGR.

A risk to that degree of improvement would be if commodity prices fell back to their longer term average. The latter ‘nominal’ shock would be offset against the better news for the ‘real’ economy of higher participation and higher birth rates.

Accordingly, the scenario results shown below provide comparisons with our updated ‘baseline’ scenario where appropriate, rather than with the original IGR projections. Chart 14 (below) illustrates how the outlook for PBS spending as a percentage of GDP has changed since the release of the 2002 IGR. It shows the results of three scenarios:

- **A ‘baseline’ scenario**, reflecting similar assumptions to those used by Treasury in the 2002 IGR projections, but including the updated economic trends identified above. As in the original IGR.
• Current PBS spending levels are taken from official estimates for the 2005-06 financial year as published in the 2002-03 Federal Budget.

• Growth in PBS spending is based on historic ‘non-demographic’ PBS growth from 1983-84 to 2005-06 (that is, spending growth after economy-wide inflation, population growth and population ageing are removed).

• An ‘updated levels’ scenario, which updates starting points based on information which has become available since the 2002 IGR, but leaves growth rates over time unchanged. This scenario uses:
  • PBS spending levels from the forward estimates contained in the 2006-07 Federal Budget (covering the period to 2009-10);
  • Non-demographic PBS cost growth as in the ‘baseline’ scenario.

• An ‘updated growth’ scenario, which builds on the ‘updated levels’ projections by including more recent spending data in the historic growth average used to inform future cost growth. It sees:
  • PBS spending levels as in the ‘updated levels’ scenario;
  • Non-demographic PBS cost growth based on historic changes from 1987-88 to 2009-10.

**Chart 14: PBS spending, updated alternative projections**

<table>
<thead>
<tr>
<th>PBS SPENDING PROJECTIONS</th>
<th>CHANGE FROM BASELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>% GDP</td>
<td>% GDP</td>
</tr>
<tr>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>0.5%</td>
<td>-0.2%</td>
</tr>
<tr>
<td>1.0%</td>
<td>-0.4%</td>
</tr>
<tr>
<td>1.5%</td>
<td>-0.6%</td>
</tr>
<tr>
<td>2.0%</td>
<td>-0.8%</td>
</tr>
<tr>
<td>2.5%</td>
<td>-1.0%</td>
</tr>
<tr>
<td>3.0%</td>
<td></td>
</tr>
<tr>
<td>3.5%</td>
<td></td>
</tr>
</tbody>
</table>

**Baseline:**
Recreates the PBS spending assumptions used in the 2002 IGR

**Updated levels:**
Uses the same PBS growth rate as the original IGR, but updates spending levels based on more recent data

**Updated growth:**
Uses the same methodology as the 2002 IGR, but updates both spending levels and growth rates based on more recent data

<table>
<thead>
<tr>
<th>Source</th>
<th>Base year</th>
<th>PBS growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>2002-03 Budget</td>
<td>22 years to 2005-06</td>
</tr>
<tr>
<td>Updated levels</td>
<td>2005-06 (est.)</td>
<td></td>
</tr>
<tr>
<td>Updated growth</td>
<td>2006-07 Budget</td>
<td>22 years to 2009-10</td>
</tr>
<tr>
<td></td>
<td>2009-10 (est.)</td>
<td></td>
</tr>
</tbody>
</table>

---

4 While the growth rate averages used are referred to as ‘historic’ growth rates, a component of the cost growth is based on Budget estimates of future spending. This follows the methodology used in the 2002 IGR projections.
As Chart 14 shows, accounting for the moderation evident in recent spending levels results in a small reduction in projected long run PBS costs in 2041-42 of less than 0.1 percentage point of GDP.

When the effects of recent changes to PBS growth are included, projected PBS costs in 2041-42 fall by 0.88 percentage points of GDP, or more than 46% of the original IGR prediction.

In other words, if the same methodology for projecting PBS costs is applied using updated data, then the results suggest that 46% of the projected relative growth in PBS costs in the 2002 IGR has already been countered by recent changes.

### 4.3 ALTERNATIVE HISTORICAL GROWTH RATES

As noted in the 2002 IGR, projections of PBS spending are sensitive to the non-demographic growth assumptions used. In examining alternative projections of the future of the PBS, it is useful to consider how such assumptions can change long run spending outcomes.

As the left panel of Chart 15 shows, even changes to time period used to calculate historical long run growth rates can alter the long run assumptions underlying PBS projections.

In the scenarios mapped in the charts below, the IGR assumption of 22 year average compound growth in total PBS expenditure is compared with four similar alternatives, reflecting 15, 10, 3 and 1 year average compound growth rates, respectively.

#### Chart 15: PBS spending, alternative historical growth rates

<table>
<thead>
<tr>
<th>PBS growth - historical averages</th>
<th>Projected PBS spending - 2041-42</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nominal</strong></td>
<td><strong>Real non-demographic</strong></td>
</tr>
<tr>
<td>14% av. annual compound growth</td>
<td>3.5% % GDP</td>
</tr>
<tr>
<td>12%</td>
<td>3.0%</td>
</tr>
<tr>
<td>10%</td>
<td>2.5%</td>
</tr>
<tr>
<td>8%</td>
<td>2.0%</td>
</tr>
<tr>
<td>6%</td>
<td>1.5%</td>
</tr>
<tr>
<td>4%</td>
<td>1.0%</td>
</tr>
<tr>
<td>2%</td>
<td>0.5%</td>
</tr>
<tr>
<td>0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Growth in the dollar value of the PBS</th>
<th>Start year</th>
<th>End year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nominal:</strong></td>
<td>2002 IGR</td>
<td>2005-06 (est.)</td>
</tr>
<tr>
<td>20 years</td>
<td>1983-84</td>
<td></td>
</tr>
<tr>
<td>15 years</td>
<td>1989-90</td>
<td></td>
</tr>
<tr>
<td>3 years</td>
<td>1994-95</td>
<td></td>
</tr>
<tr>
<td>1 year</td>
<td>1999-00</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PBS spending growth per person, after inflation and ageing effects are removed</th>
<th>Start year</th>
<th>End year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nominal:</strong></td>
<td>2002 IGR</td>
<td>2009-10 (est.)</td>
</tr>
<tr>
<td>10 years</td>
<td>1999-00</td>
<td></td>
</tr>
<tr>
<td>3 years</td>
<td>2006-07 (est.)</td>
<td></td>
</tr>
<tr>
<td>1 year</td>
<td>2008-09 (est.)</td>
<td></td>
</tr>
</tbody>
</table>
Projections of PBS spending shown in the left panel of Chart 15 highlight the major changes in long run outcomes from such changes to assumptions.

Given the recent changes in PBS spending trends outlined in Chapter 3, the choice of which historical growth average informs future growth assumptions can make a significant impact on long run results. In broad terms:

- Choosing a longer run growth rate leads to the largest increase in projected PBS spending in 2041-42.
- A 10 year average growth rate assumption leads to a reduction in relative PBS spending growth of more than half.
- A short run view results in relatively stable relative spending on the PBS in the long term.

This highlights the fact that PBS spending trends seen in recent years, were they to be maintained, would be enough to secure the future of the PBS in coming decades.

### 4.4 A REASONABLE CENTRAL VIEW

As noted in Chapter 3, recent PBS spending growth has slowed, failing to meet the expectations in the 2002 IGR. Even if a new long run average growth rate is assumed, an instant return to long run growth is unlikely.

Here we present a ‘central case’ scenario. That scenario reflects Medicines Australia’s view that a gradual return to long run trends is a more reasonable assumption for PBS growth over the next decade. This scenario makes plausible assumptions, takes official Budget estimates as a starting point, and provides a very different picture of the future of the PBS.

Rather than applying a long run growth rate immediately, this scenario assumes a gradual return to the historical trend over a ten year period. This represents a ‘petering out’ of the impact of government pricing policies and other factors which have reduced cost growth in recent years.

Specifically, it assumes:

- Non-demographic PBS cost growth through to 2009-10 as published in the recent Budget forward estimates.
- Non-demographic growth returns to the 20 year average shown in Chart 15 by the year 2021-22.
- One tenth of the difference in growth rates is added each year in the intervening period (2010-11 to 2021-22).
Chart 16 compares the results of this scenario with those of the ‘baseline’, and the updated growth scenario shown in Chart 14.

It shows that, if the current low rate of PBS spending growth were to return slowly to a long run 20 year average, then the result would be a reduction in the projected cost of the scheme in 2042 of around 0.97% of GDP.

**Chart 16: PBS spending, central case projections**

<table>
<thead>
<tr>
<th>PBS SPENDING PROJECTIONS</th>
<th>CHANGE FROM BASELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>% GDP</td>
<td>% GDP</td>
</tr>
<tr>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>0.5%</td>
<td>-0.2%</td>
</tr>
<tr>
<td>1.0%</td>
<td>-0.4%</td>
</tr>
<tr>
<td>1.5%</td>
<td>-0.6%</td>
</tr>
<tr>
<td>2.0%</td>
<td>-0.8%</td>
</tr>
<tr>
<td>2.5%</td>
<td>-1.0%</td>
</tr>
<tr>
<td>3.0%</td>
<td>-1.2%</td>
</tr>
<tr>
<td>3.5%</td>
<td></td>
</tr>
</tbody>
</table>

**Baseline:**
Recreates the PBS spending assumptions used in the 2002 IGR

**Updated growth:**
Uses the same methodology as the 2002 IGR, but updates both spending levels and growth rates based on more recent data

**Central Case:**
Uses the same assumptions as updated growth, but gradually increases PBS spending growth to the current long run average over 10 years

<table>
<thead>
<tr>
<th>Source</th>
<th>Base year</th>
<th>PBS Growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>2002-03 Budget</td>
<td>2005-06 (est.) 22 years to 2005-06</td>
</tr>
<tr>
<td>Updated growth</td>
<td>2006-07 Budget</td>
<td>2009-10 (est.) 22 years to 2009-10</td>
</tr>
<tr>
<td>Central case</td>
<td>2006-07 Budget</td>
<td>2009-10 (est.) 2009-10, rising to 20 year average by 2020-21</td>
</tr>
</tbody>
</table>

These projections show that close to half of the relative growth in the PBS predicted by the 2002 IGR may already have been prevented.

Indeed, even if current efforts to restrain PBS spending are allowed to wane over coming years, the future of the PBS is rather more secure than the original IGR feared.
5. PBS OUTCOMES AND FUTURE FISCAL PRESSURES

5.1 THE 2002 IGR VIEW

Spending on the PBS is an important part of the long run fiscal projections presented in the first IGR, but there are also other demographic trends at work.

Chart 17 shows a broader measure of the results by focussing on the government’s overall primary balance. This measure represents total revenue less total spending, where the latter excludes the effects of interest payments on previous deficits or surpluses. In effect it shows the gap between revenue and expenditure in each year – while ignoring the effect of debt servicing costs on the Budget bottom line.

The scenarios shown use the same assumptions as above. As before, using the same economic assumptions as the Treasury model gives very similar projections for overall fiscal pressures.

**CHART 17: GOVERNMENT PRIMARY BALANCE, COMPARISON WITH 2002 IGR PROJECTIONS**

![Graph showing government primary balance comparison with 2002 IGR projections](image)

**2002 IGR: Federal Treasury’s projections as seen in the 2002 Intergenerational Report**

**AE IGR:** Access Economics’ recreation of the Treasury model

**AE Baseline:** Access Economics’ projections using updated economic assumptions

A different view of future economic developments, as well as the inclusion of recent trends in participation, reduces the projected government deficits in coming decades. With the adoption of the more complete economic projections outlined above, looming federal deficits are projected to be 4.1% of GDP in 2042, smaller than the 5% figure foreshadowed in the original IGR projections.\(^5\)

---

\(^5\) A caveat to the above view is that it allows for effects on the real economy from developments in recent years (with changed assumptions as to participation and productivity), but does not allow for the effects of a ‘reversion to the longer term norm’ in commodity prices. As noted above, the OECD has warned that the latter could strip 1¾% of GDP off the government’s Budget balance.
5.2 THE IMPACT OF ALTERNATIVE PBS PROJECTIONS

While demographic challenges will create many potential pressures on future government finances, PBS subsidies were identified in the 2002 IGR as a key driver of projected Budget shortfalls over coming decades. It is therefore useful when examining alternative projections for PBS spending to place the results outlined in Chapter 4 in a wider Budget context.

As Chart 18 shows, the PBS makes up a small share of current Federal Government expenses on Health and Aged Care, and a smaller share still of the overall budget. But as the IGR noted, health care will make up a growing slice of Federal spending over coming decades as both relative price inflation and the quantity impact of an ageing population take hold.

In the original IGR projections, the predicted rapid increase in PBS spending was expected to see the scheme command a much larger share of health and aged care spending in coming decades.

**Chart 18: PBS spending as a share of Federal Government expenses**

<table>
<thead>
<tr>
<th>Source</th>
<th>PBS Base year</th>
<th>PBS Growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>2002-03 Budget</td>
<td>2005-06 (est.) 22 years to 2005-06</td>
</tr>
<tr>
<td>Central case</td>
<td>2006-07 Budget</td>
<td>2009-10 (est.) 2009-10, rising to 20 year average by 2020-21</td>
</tr>
</tbody>
</table>

While the projections above also see the PBS growing in relative terms, the ‘central case’ scenario in Chart 18 suggests the scheme will account for 5% of future spending, rather than the 9% implied by the IGR results.
Chart 19 above presents the results of the alternative PBS projections in Chapter 4 in similar terms to the IGR results – focusing on the overall burden of future health price and ageing effects on future taxpayers.

Improvements in the long term fiscal and economic outlook outside the PBS mean that updated starting points result in a greater reduction in overall future deficits than in PBS spending alone. After including a range of economic and Budget changes, including lower than expected PBS spending, these projections show a reduction in future deficits of around 0.3% of GDP.

When recent spending trends are included in the PBS cost growth assumption, the projections show a further reduction in the expected future burden on government. Using similar assumptions to those underlying the original IGR, the results above show a reduction in long run fiscal pressures of 1.15% of GDP, or around 42% of the IGR prediction.

As noted above, assumptions about long run PBS spending trends have a significant impact on long term Budget projections. That is particularly true as the PBS spending
Intergenerational Report Review

projections are more sensitive to long run growth assumptions than some other aspects of the IGR picture.

Even if recent changes have a waning effect on PBS growth rates over time, these projections suggest that they have already improved the outlook for Federal finances that was considered in the 2002 IGR. Allowing for a gradual return to long run growth, as seen in the ‘central case’ scenario, would reduce the projected long run deficit by 1.25% of GDP, or more than 43%.

5.3 THE BENEFITS OF THE PBS

This scenario is designed to illustrate the potential benefits of PBS medications in reducing the need for other forms of federal spending on health care.

The ‘improved health’ scenario below assumes that:

- Age-specific pharmaceutical spending would rise at the same rate as assumed in the 2002 IGR.
- Other health spending is determined on an ‘age-from-death’ basis (subject to the relative increase in health costs otherwise assumed in the 2002 IGR). That is, if life expectancy rises by 1 year, then a 71 year old in the future spends the same amount on health care as was otherwise projected for today’s 70 year old.

**CHART 20: GOVERNMENT PRIMARY BALANCE, POTENTIAL IMPACT OF IMPROVED HEALTH OUTCOMES**

**Baseline:** Recreates the PBS spending assumptions used in the 2002 IGR

**Central Case:** Increases PBS spending growth to the current long run average over 10 years

**Improved Health:** PBS spending projections are unchanged from the 2002 IGR. Other health costs are reduced, as rising life expectancy is assumed to result in more healthy years of life.

While predicting the impact of pharmaceuticals on long term health outcomes is difficult, and the effect of improved health status on future health spending is similarly uncertain, the potential pool of benefits from preventative use of medicines is growing rapidly.
And those benefits may not just flow to patients as improved quality of life. There could be scope for savings to be made by governments in other subsidised areas of health care as high cost procedures and treatments are avoided.

The long term projections in Chart 20 show one potential avenue through which cost and ageing pressures in the health sector might be eased. With life expectancy continuing to rise, the degree to which the average Australian lives healthier as well as longer will be important in determining future health care trends.

By effectively assuming that all increases in life expectancy are ‘healthy years’, these projections show a reduction in government health costs of 1% of GDP.

Before considering measures to curb growth in PBS spending, there is a clear case for assessing both costs and benefits when considering the future of the scheme.

In other words, there is a case to suggest that the guiding principle for policy should not simply be cost. It is ‘value for money’ which reflects the true merit of the PBS arrangements, and that value should be part of any long term assessment of the scheme.

Including a simple view of the potential benefits of PBS medications may have a significant impact on future Federal deficits, reducing the burden on future taxpayers by close to 20% even if the PBS spending growth predicted in the 2002 IGR were to occur.
6. CONCLUSIONS

In the 2002 IGR a bleak picture for government finances was forecast across the next 4 decades. It suggested that demographic pressures brought on by the retiring baby boomers, combined with rapidly rising expenditure on government-subsidised pharmaceuticals and other health services, would inevitably lead to larger and larger budget deficits.

Small differences in the assumptions used to estimate future costs can lead to a very large difference in projected outcomes. Already a number of the assumptions that were used in the 2002 IGR have been revised, have exceeded expectations, or not met expectations.

In particular, noticeable changes have been seen in the path of PBS spending of late. The latest PBS spending figures show smaller increases in pharmaceutical costs than expected in the 2002 IGR, with the scheme contracting in real terms in the year to June 2006.

As a result of this slowdown in PBS spending growth, similar assumptions to those in the 2002 IGR about growth rates in PBS spending from here on in, would now lead to different projections of the future of the scheme.

As the updated projections presented here show, the choice of assumptions for future PBS cost growth is the major determinant of the level of projected expenditure in the long term. As rates of cost growth have changed significantly over time, the choice of which historical average to apply when calculating long term growth becomes paramount.

When the effects of recent changes to PBS growth are included, projected PBS costs in 2041-42 are around 0.9 percentage points of GDP lower, a reduction of around 46% of the original IGR predicted increase.

In other words, if the same methodology for projecting PBS costs is applied using updated data, then the results suggest that 46% of the projected relative growth in PBS costs in the 2002 IGR has already been countered by recent changes.

So even if current measures to constrain PBS growth lose their effectiveness over time, savings will still be significant – with fiscal pressures being reduced by roughly a quarter (from a 4% primary balance deficit in 2041-42 based on Treasury’s assumptions to around 3% in the central case presented here).

These projections show that close to half of the relative growth in the PBS predicted by the 2002 IGR may already have been prevented. That is no surprise – the ‘magic of compound interest’ means that early changes have ultimately magnified effects.

Indeed, even if current efforts to restrain PBS spending are allowed to wane over coming years, the future of the PBS now appears rather more secure than the original IGR feared.