Institute of Actuaries of Australia

Risk Equalisation 2020
Is the current system sustainable?

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Abstract and Introduction

- Risk equalisation shares the cost of older policyholders and the most expensive claims across all health insurers, and is therefore an essential part of Australia's community rated private health insurance system
- The size of the risk equalisation pool has increased significantly since the new arrangements were introduced in 2007
  - Around $3.6 billion in benefits were included in the risk equalisation pool in the 2009/10 year, compared to $2.5 billion in 2006/07, and only $1.3 billion in 1999/00
  - Approximately 30% of the increase in the risk equalisation pool in recent years has been a result of the ageing of PHI participants
- More importantly, pooled benefits have grown at a faster rate than overall benefits, meaning that a greater proportion of benefits is pooled each year
- Pooling reduces the incentive for individual insurers to manage their costs. The growth of the risk equalisation pool means that higher costs are passed to younger policyholders. Private health insurance needs to continue to be financially attractive to younger Australians in order for community rating to remain viable
- In this paper we:
  - Estimate the size of the risk equalisation pool in 2020, identifying the drivers of change
  - Assess the impact of growing risk equalisation costs on the viability of the Australian private health insurance model
  - Investigate whether alternative risk equalisation arrangements may be more sustainable.

Keywords: Health insurance, risk equalisation, market structure, industry change

The following abbreviations are used a number of times in this paper:

ABP – Age Based Pool
AWE – Average Weekly Earnings
HCCP – High Cost Claimants Pool
MLS – Medicare Levy Surcharge
PHI – Private Health Insurance
PHIAC – Private Health Insurance Administration Council
SEU – Single Equivalent Unit

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Executive Summary

What does sustainable mean?

There have been a number of different risk equalisation arrangements since community rating was introduced in Australian private health insurance. This paper investigates the likely longevity of the current risk equalisation arrangements.

The main aim of risk equalisation is to subsidise insurers that cover high risk individuals. However, private health insurance can only remain affordable if low risk individuals also decide to insure. Risk equalisation systems therefore need to consider the importance of maintaining affordability for all policyholders.

We proposed a set of characteristics required by a risk equalisation system, and defined sustainability in terms of those characteristics. We proposed three metrics that could indicate whether risk equalisation arrangements are likely to become unsustainable.

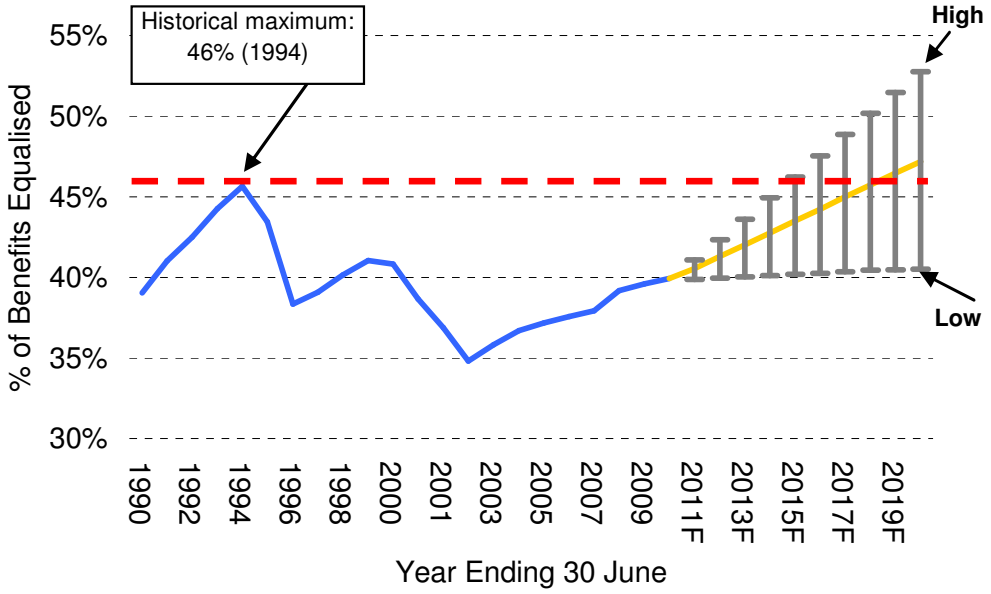
One of the metrics considered was the proportion of total hospital benefits that are equalised. Insurers have a much greater incentive to control claim costs that are paid entirely by the insurer rather than pooled. As the proportion of shared costs increases, there is less incentive to control costs and, therefore, greater inflationary pressures on premiums.

Other metrics considered the effective subsidy from young policyholders to older policyholders, and the cost of insurance relative to average weekly earnings.

Are the current arrangements sustainable?

We developed a model of future PHI participation rates and claim costs, and calculated how the current risk equalisation arrangements would respond. Figure 1 shows the range of estimates produced, and compares this to the historical experience.

Figure 1 – Proportion of Hospital Costs Shared Through Risk Equalisation



Our best estimate of the proportion of benefits shared in 2020 is 47%, compared to 40% in 2010.

The optimistic and pessimistic estimates are 40% and 53% respectively. The different estimates reflect changes in relative PHI participation rates and claims inflation assumptions of different age groups.

The other metrics considered showed large increases in the effective subsidy from young policyholders to older policyholders, and in average premiums relative to AWE.

The adverse cost trends modelled will present challenges to the industry in terms of premium rates and customer retention, particularly for younger people. There must be a point where low risk individuals decide private health insurance is too expensive, and so choose to rely on the public health system and/or self funding. However, the price that would represent a "tipping point" for private health insurance is unknown.

The highest level of benefits equalised in the last 20 years was 46% in 1994, just prior to a change in risk equalisation arrangements. Our projections show that by 2020 risk equalisation is reaching a level where the system was previously considered unsustainable and was changed.

How can we do better?

We recommend that refinements to the risk equalisation arrangements be considered now, before the current arrangements become unsustainable.

We considered a range of scenarios to demonstrate the drivers of changes in risk equalisation costs. We compared each scenario to our list of characteristics required by a risk equalisation system.

Some scaling back of the current scheme would appear to be a simple way to improve the longevity of the current arrangements. For example, the proportion of claims shared could be gradually reduced for all age groups, or some age groups could be gradually removed from the age based pool.

The scenarios also show that the sustainability of the risk equalisation arrangements depend on participation of young people in PHI. Government should consider incentives for young people as a priority. Requiring overseas visitors and students to contribute to risk equalisation may be a possibility here.

We feel that some changes to the HCCP are appropriate, whether this be abolition of the pool or indexation of the fixed $50,000 threshold. As a minimum some form of indexation would appear necessary to ensure only the largest claims fall inside the HCCP.

In the long term, more thorough reworking of risk equalisation arrangements may be desirable. Two countries which have recently reviewed private health insurance arrangements (the US and the Netherlands) have opted for a risk based capitation approach to risk equalisation. Risk based capitation measured up well against our criteria for sustainability, and so should remain under active consideration in Australia.

If risk based capitation is the best system for Australia, making the change sooner rather than later would better allow any adverse impacts on individual insurers to be addressed, for example, by phasing in new arrangements over a number of years.

<u>Note</u>

The paper is based entirely on publicly available information, and alternative data sources could be used to refine the estimates if they were available. While we have exercised due care in the preparation of this paper the contents should not be relied on, and do not constitute actuarial advice.

1 The Past – A Short History of Risk Equalisation in Australia

This chapter briefly describes the risk equalisation arrangements that have existed historically in Australia. We outline the current arrangements and summarise the recent financial experience.

Note that in this paper we use the term risk equalisation to refer to any mechanism used to adjust for differences in claim costs between insurers, not necessarily the current arrangements.

1.1 Previous Arrangements

Risk Rating and Community Rating

A risk for any health, life or general insurer is that insurance is most attractive to people who expect to make claims (adverse selection risk). Underwriting typically seeks to address this issue by the risk rating of premiums, limiting the scope of policies or declining to insure certain individuals.

Community rating is a system of setting premiums that restricts the ability of insurers to reflect differences in expected claim costs between individuals in premiums charged.

The requirement for risk equalisation in a community rated environment is often demonstrated by the example of an insurer covering a greater proportion of "high-risk" policyholders than its competitors. By "high-risk", we mean policyholders who would be expected to have higher than average claim costs due to their health. In the absence of an adjustment mechanism, the insurer covering a large number of high-risk policyholders would be required to charge a high premium to cover claim costs.

Low-risk policyholders would likely leave the insurer to find cheaper cover elsewhere, requiring the expensive insurer to increase premiums further to compensate. Without intervention this cycle would ultimately result in the failure of insurers that find themselves with more high-risk policyholders than their competitors.

Historical Background

The first Australian health insurers were able to mitigate adverse selection in a similar way to general insurers. For example, insurers could decide to provide cover only for people below a certain age, or to exclude claims arising from pre-existing conditions.

Since health insurers were typically not-for-profit entities formed to serve particular groups, the need to prevent adverse selection was balanced with the desire to provide cover to the target group. Government also had an interest in broadening access to health care, especially in the absence of a comprehensive public health system.

Community rating was introduced for Australian health insurance in 1953, but took a very different form to community rating today. For example, through fund rules insurers

were still able to deny payment for chronic illness or pre-existing conditions. This helps explain why the industry was able to operate without risk equalisation arrangements until 1959, when insurers were given the option of setting up "Special Accounts" to cover certain high risk policyholders.

In the pre-Medicare environment Special Accounts were, in effect, a way for government to fund certain treatments not covered by private health insurers.

Summary of Previous Arrangements

Since 1959 a range of risk equalisation systems have been in place in Australia to support the principle of community rating. All the systems have been applied retrospectively to claims paid (that is, based on usage of insurance).

The table below summarises the most significant changes to the risk equalisation arrangements over time. Appendix A lists the sources for this information, which provide more detail on the history of risk equalisation in Australia.

Table 1.1– Summary of Risk Equalisation Arrangements

Year Introduced	Who is subsidised?	Subsidy Amount	Who pays subsidy?
1959	Insureds with chronic illness or pre-existing conditions, or requiring hospitalisation beyond a limited period	Claimants eligible for subsidy are grouped into a "special account" Subsidy covers the differences between premiums and the insurer's costs for these claimants However, the special account only covered "standard" benefits, which were often less than the actual cost of care	Commonwealth Government
1976	Insureds requiring hospitalisation beyond a limited period	Subsidy covers full cost of eligible claims	Insurers based on membership However, insurer costs are reduced by Commonwealth Government subsidies of $50 million to $100 million per year until 1983, with much lower subsidies in later years

1989	Insured aged over 65, and under 65s requiring hospitalisation beyond a limited period	Subsidy covers full cost of eligible claims	Insurers based on membership (government subsidies now minimal)
1995	Insured aged over 65, and under 65s requiring hospitalisation beyond a limited period	Subsidy reduced to 79% of eligible claims as an incentive to control costs	Insurers based on membership
2007	Insureds aged over 55, and insureds with very high claim costs	Subsidy varies depending on age of claimant, varying from 15% for 55-59 year olds to 82% for over 85 year olds	Insurers based on membership

Differences in the arrangements over time have included:

- Who is subsidised - recent schemes have used policyholder age and/or length of hospital stay as a proxy to identify high-risk policyholders
- Subsidy relative to claim costs - the arrangements have changed to pay less than 100% of eligible benefits
- How funds are raised to cover the subsidy. While costs were initially paid by the government the subsidy is now financed entirely by insurers, based on membership.

Under the current arrangements insurers with fewer than average "high-risk" policyholders pay into the pool, and these funds are allocated to insurers with more than average "high-risk" policyholders. In effect, there is a loading on every private health insurance policy to cover the subsidy.

Historical Trivia

The Nimmo Report of 1969 prompted significant changes to the health insurance environment. The reports six main findings were as follows:

- The operation of the health insurance system is unnecessarily complex and beyond the comprehension of many
- The benefits received by contributors are frequently much less than the cost of hospital and medical treatment
- The contributions have increased to such an extent that they are beyond the capacity of some members of the community and involve considerable hardship for others
- The rules of many registered organisations including the so-called "special account" rules permit disallowance of reduction of claims for particular conditions
- An unduly high proportion of the contributions received by some organisations is absorbed in operating expenses
- The level of reserves held by some organisations is unnecessarily high.

Nimmo's detailed recommendations include those relating to premium rebates and informed financial consent.

It seems that, while some things change, some things remain the same.

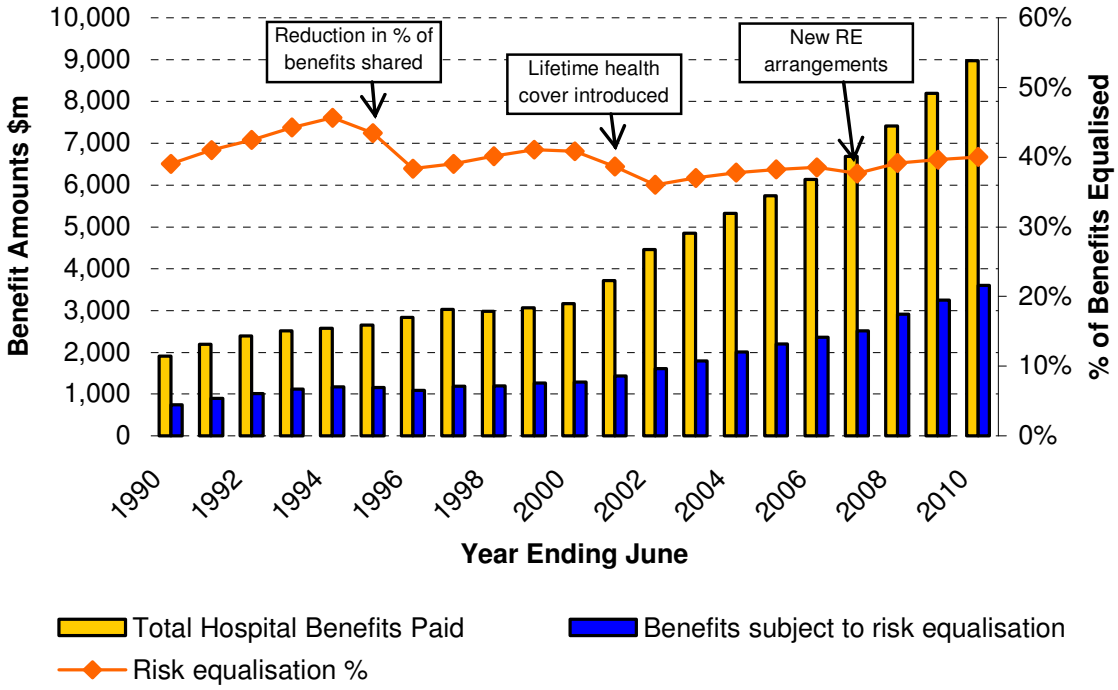
1.2 Financial Experience

The figure below summarises the financial experience of risk equalisation over the last twenty years, showing total hospital benefits paid and the proportion of those payments shared through the risk equalisation arrangements.

Costs in the risk equalisation pool are allocated to insurers based on market share, without any adjustment for other differences (for example, differences in hospital contract rates, the level of benefits provided or operational efficiency).

As the proportion of shared costs increases, the incentive for an individual insurer to control costs reduces. The proportion of costs shared is therefore an important metric when comparing different risk equalisation arrangements.

Figure 1.1– Historical Hospital Benefits Paid and Risk Equalisation



Source: Finity analysis of PHIAC statistics

In the year ending 30 June 2010 $9.0 billion was paid by Australian private health insurers in hospital claims. Of this amount, $3.6 million (40%) was spread across all insurers through the risk equalisation arrangements. Over the last 20 years the proportion of hospital payments covered by risk equalisation has ranged from 36% (in 2002) to 46% (in 1994).

Two events resulted in reductions in the proportion of hospital benefits covered by risk equalisation:

- The reduction in proportion of eligible claims that were pooled from 100% to 79% after 1995
- The introduction of Lifetime Health Cover in 2000, which increased the proportion of claims not subject to risk equalisation by encouraging healthy people to purchase private health insurance.

These events show that the amount of claims subject to risk equalisation depends not only on the design of the risk sharing arrangements but on other aspects of the PHI environment. Other than the two changes noted above, the proportion of hospital claims subject to risk equalisation has generally increased slightly year on year.

The introduction of new risk equalisation arrangements in 2007 did not have a significant initial impact on the proportion of claims shared. More detail on the reasons for recent growth in the risk equalisation pool is given below.

1.3 The Current Arrangements

Description of Current Arrangements

The current risk equalisation arrangements commenced on 1 April 2007. The Age Based Pool (ABP) shares the claim costs of older policyholders, and the High Cost Claimants Pool (HCCP) provides a further level of risk sharing for the most expensive policyholders.

The percentage of eligible claims included in the ABP varies from 15% for a 55 year old, to 82% for someone over 85 years old.

If the claims for an insured person exceed $50,000 in a year after any recoveries from the ABP, 82% of the amounts above $50,000 are allocated to the HCCP. Considering both pools in total, the maximum proportion of any claim that can be shared through risk equalisation is 82%.

The ABP is far larger than the HCCP. Of the $3.6 billion subject to risk equalisation in the year ending June 2010, only $80 million (2%) was in respect of the HCCP.

Insurers are required to contribute to the cost of the shared claims (combined ABP and HCCP) is proportion to their customer base[1].

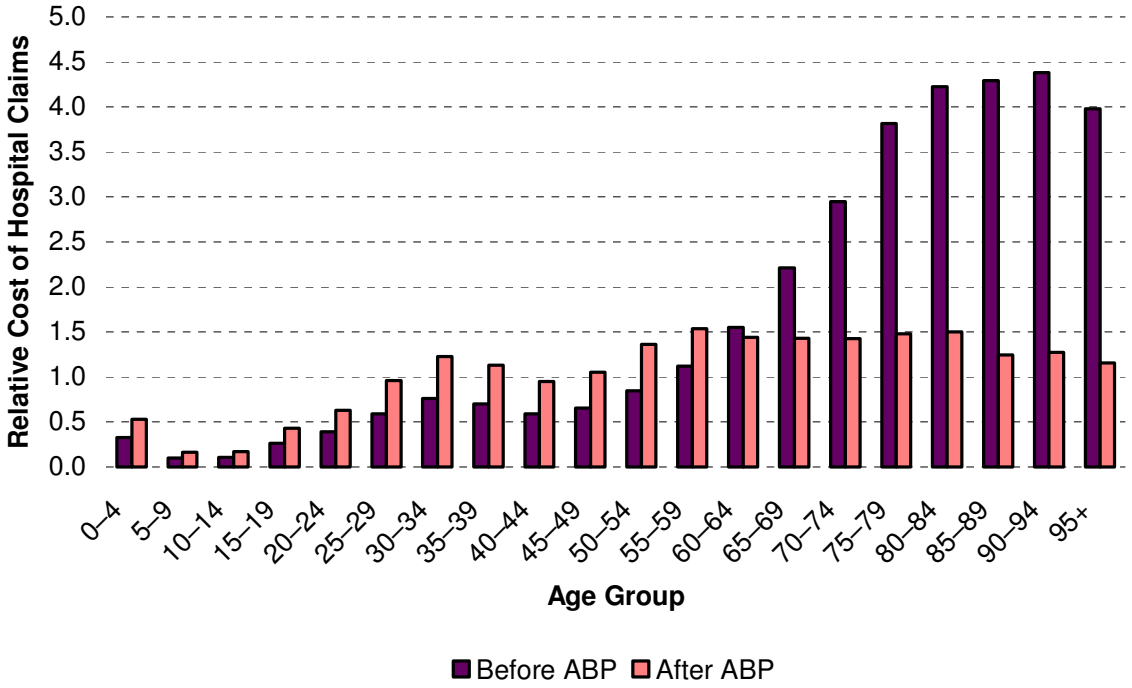
Each quarter, insurers are required to submit to PHIAC a detailed summary of their claims experience for thee risk equalisation calculations. Hospital benefits paid by age band and the number of HCCP claimants are included on the PHIAC 1 form which provides information about whether the insurer is due a rebate or owes the fund. The calculations are performed separately for each state.

Effect on Differences in Claim Costs

The following figure shows the relative cost of hospital claims for each age group, based on PHIAC statistics for the year to September 2010. We also show how the relative cost of claims changes once recoveries from the ABP are considered.

[1] More precisely, insurers calculate their customer base in terms of Single Equivalent Units (SEUs). Single policies count as one SEU, and couple or family policies count as two SEUs. All of the less common policy types (single parent, 3+ adults etc) count as either one or two SEUs.

Figure 1.2 – Relative Cost of Hospital Claims by Age Group



Source: Finity analysis of PHIAC statistics

The relative cost is calculated as the hospital drawing rate per person covered for the age group, divided by the overall average hospital drawing rate. The figure shows the result before and after the effect of the ABP.

The ABP significantly reduces differences in relative cost by age group by increasing subsidies as policyholder age increases. However, there remain large differences in relative cost between age groups even after risk equalisation; for example, average claim costs for a 20 year old are half the level of a 50 year old.

The risk equalisation arrangements do not allow for differences is policyholder characteristics within age groups, other than in a limited way through the HCCP. For example, the arrangements do not allow for differences in expected claim costs between smokers and non-smokers, small families and large families, or people living in cities or rural areas.

Changes in Benefits Subject to Risk Equalisation

The following table provides more details on the changes in hospital costs and the risk equalisation pool since the new arrangements were introduced.

Table 1.2 – Analysis of Change in Risk Equalisation Pool

Increase Over Previous Year	Year Ending 30 June 2009	2010	Average
Hospital Benefits	10.5%	9.5%	10.0%
Risk Equalisation Pool	11.9%	10.4%	11.1%
Of which:			
Increase in ABP Due to Ageing	3.1%	3.2%	3.2%
Increase in ABP Due to Other Factors	8.3%	6.7%	7.5%
Increase in HCCP	0.5%	0.5%	0.5%
Growth in Risk Equalisation Pool *less* growth in hospital benefits	**1.4%**	**0.9%**	**1.2%**
Persons covered	2.2%	2.3%	2.3%

Over the period shown the amount of hospital benefits paid increased by 10% per year, and the amount of those benefits included in the risk equalisation pool increased by 11% per year.

Of the 11% increase in risk equalisation amounts, just over 3% can be attributed specifically to ageing. The ageing impact is estimated by applying, for example, the 2010 year drawing rates to the age mix insured in the 2009 year.

Around 7.5% of the increase in the ABP is attributed to factors other than age, which would include growth in the total number of people insured (2.3%), inflation not related to ageing, and changes in mix of insureds by state. Growth in the HCCP contributes 0.5% to the annual inflation rate.

Small differences between risk equalisation and overall hospital inflation over a two year period will not be material for most insurers. However, differences in inflation rates could be significant over the longer term, or if those differences widened.

2 What is a sustainable risk equalisation system?

This section is structured as follows:

- We consider attributes of risk equalisation systems, separately listing our view of the required features (Section 2.1) and desirable features (Section 2.2)
- Based on those features we propose a definition for "sustainable" in Section 2.3
- We then suggest quantitative measures of sustainability in Section 2.4.

2.1 Required Features

The aim of community rating is to ensure private health insurance remains affordable for all Australians, including those with the greatest healthcare needs.

We consider the following to be essential requirements of any risk equalisation arrangements:

Subside High Cost Claimants

The system should support premiums of "high risk" policyholders, for example, by transferring revenue from the insurers with small proportions of elderly customers to insurers with larger proportions of elderly customers.

Maintain Affordability for All Policyholders

Transferring money between insurers may help individual insurers to remain solvent, but has no impact on industry average premium levels. If only high risk individuals decided to purchase health insurance, high premiums would be needed to cover claim costs regardless of how costs were spread between insurers.

One alternative model would be to require every claim to be subject to risk equalisation, so that industry costs are shared entirely based on market share. Under this "pure" community rating system everyone would pay similar premiums, since each insurer would have the same average claim costs. However, the system provides insurers only limited scope to manage claim costs so premiums may not be affordable.

Private health insurance can only remain affordable if low risk individuals consider insurance is good value for money and decide to insure. Risk equalisation arrangements therefore need to support low premiums by:

- Ensuring there are incentives for insurers to manage claim costs efficiently
- Limiting the size of the subsidy from low risk policyholders to high risk policyholders.

2.2 Desirable Features

Other important features of risk equalisation schemes include the following:

Risk Mitigation

In addition to providing incentives to manage claim costs efficiently, risk equalisation arrangements would ideally provide incentives for insurers to improve the health of policyholders.

Disease prevention initiatives reduce whole of life care costs, which reduce future claim costs and premiums. However it is difficult to provide such incentives as policyholders change insurers from time to time; one insurer may pay for risk mitigation and another insurer get the benefit of lower claim costs.

Simplicity

As far as possible, risk equalisation arrangements should be easy to understand and administer. However, modern data systems mean that schemes which would have been considered unworkable in the past may now be practical.

Equity

The system should be considered as being equitable by all stakeholders – high and low risk individuals, different types of insurers, and the government.

Changes which make certain types of insurer unviable would be unsatisfactory if this materially reduced competition in the industry.

In practice it can be hard to balance the interests of all parties. Any changes would result in winners and losers, and even small changes can have a material financial impact given health insurers have low profit margins. It would be necessary to be sensitive to this in implementing any changes, for example, when deciding the period over which changes are made.

Flexibility

Innovative products encourage greater participation in private health insurance and so support community rating. Risk equalisation schemes should be flexible so as not to prevent insurers designing new and innovative products which customers would like to purchase.

2.3 Defining "Sustainable"

Risk equalisation arrangements are sustainable if they have the required features listed above, and are expected to continue to have these features in future.

Since the PHI industry is subject to regular changes, a sustainable risk equalisation system should be expected to continue to support community rating under a range of possible future scenarios.

Note that there are other policies that support community rating. For example, lifetime health cover, the Medicare Levy Surcharge (MLS) and premium subsidies all help make PHI more attractive to low risk policyholders. The sustainability of risk equalisation arrangements needs to be considered in the context of these features of the PHI environment.

2.4 Measuring Sustainable

Having considered the reasons for historical changes in risk equalisation arrangements, we have proposed three metrics that could indicate whether risk equalisation arrangements are likely to become unsustainable. We have considered these metrics in our modelling (documented in the following section).

Proportion of Benefits Equalised

Insurers have a much greater incentive to control claim costs that are paid entirely by the insurer rather than pooled. If the insurer is able to contain costs then this helps premiums remain affordable. As the proportion of shared costs increases, the incentive to control costs reduces.

Average Subsidy

An insurance premium quoted to an individual can be thought of as representing the expected claim costs of that individual, plus loadings for expenses, profit and expected subsidies to or receipts from other policyholders through risk equalisation.

The value of insurance to an individual policyholder is the expected claim costs, any tax avoided by insuring plus the value placed on "peace of mind". As the burden of risk equalisation on low risk policyholders increases, the incentive to insure reduces.

Cost of Insurance

As with any product, demand for private health insurance will reduce as the price increases. We consider the affordability of private health insurance as a proportion of average weekly earnings (AWE).

3 The Future – Estimated 2020 Financials

We have projected the cost of the current risk equalisation arrangements in 2020 and summarise the results below. We have structured this section as follows:

- A summary of our findings - Section 3.1
- The results of our modelling - Section 3.2
- Details of our methodology and assumptions - Section 3.3.

Given the audience of this paper we present our results on a national average basis, but have verified that the same cost drivers are present at state level.

3.1 Findings

2020 Projections

In summary our findings are as follows:

- Proportion of benefits equalised: The proportion of claims shared through risk equalisation is expected to increase from 40% in 2010 to 47% in 2020
- Average subsidy: In 2020 over 40% of the premium paid by younger policyholders is expected to subsidise the claim costs of older policyholders, compared to 34% now
- Cost of insurance: A typical annual hospital insurance premium is estimated to be 2.1 times AWE, compared to 1.6 AWE in 2010. This is a 35% increase in the price of insurance, in real terms.

These results present the following challenges to private health insurers:

- Proportion of benefits equalised: Greater cost sharing reduces the incentive for insurers to manage their costs, possibly contributing to higher claims inflation
- Average subsidy: If younger policyholders compare insurance premiums to expected claim costs, they may consider PHI to be poor value and so choose not to insure
- Cost of insurance: While premium increases are necessary to match benefit inflation, customers who are unable to afford these increases or consider PHI poor value may no longer insure.

Lapses by people who make limited use of their insurance would result in further premium increases for those remaining covered. This could result in a downward spiral of further lapses and premium increases.

Mitigating these adverse factors, we note that costs increase gradually over ten years. Spreading costs over a long period makes them more affordable; some policyholders may not even notice the changes.

Even with annual premium increases above AWE, health insurance would remain affordable if other family outgoings increase at a slower rate than wages. Health insurance may still be considered necessary if people are reluctant to rely solely on the public health system.

Is the Current System Sustainable?

The scope of this paper is to project risk equalisation cashflows in 2020 and consider whether the current risk equalisation arrangements are sustainable.

Private health insurance can only remain affordable if low risk individuals consider insurance is good value for money and decide to insure. If only high risk individuals wanted health insurance, most would find the premiums unaffordable.

The adverse cost trends modelled will present challenges to the industry in terms of premium rates and customer retention, particularly for younger people. There must be a point where low risk individuals decide private health insurance is too expensive, and so choose to rely on the public health system and/or self funding. However, the price that would represent a "tipping point" for private health insurance is unknown.

The highest level of benefits equalised in the last 20 years was 46% in 1994, just prior to a change in risk equalisation arrangements. Our projections show that by 2020 risk equalisation is reaching a level where the system was previously considered unsustainable and was changed.

We feel that the industry should be able to share the burden of high risk claimants in a way that better mitigates some of the adverse cost trends. We recommend that refinements to the risk equalisation arrangements be considered now, before the current arrangements become unsustainable.

Early action allows time to identify and implement a preferred system. A gradual implementation provides scope for adjustment between insurers that find themselves "winners" and "losers" under the changes. We comment on some alternative risk equalisation approaches in Section 4.

3.2 Results

This section includes:

- Our forecasts for the ABP and HCCP through to 2020
- An assessment of the sustainability of those forecasts, based on the metrics described in Section 2.4 above
- Comments on the effect of the Medicare Levy Surcharge as prices change.

Size of Pool

Figure 3.1 shows the estimated future size of the ABP through to 2020, and Figure 3.2 shows our projections for the HCCP. The base case represents our "best estimate" of future costs, meaning it is not intended to be prudent or conservative.

We also show optimistic and pessimistic scenarios reflecting different PHI participation and claims inflation assumptions. Section 3.3 gives more detail on our assumptions.

Figure 3.1 – Estimated Future Size of ABP

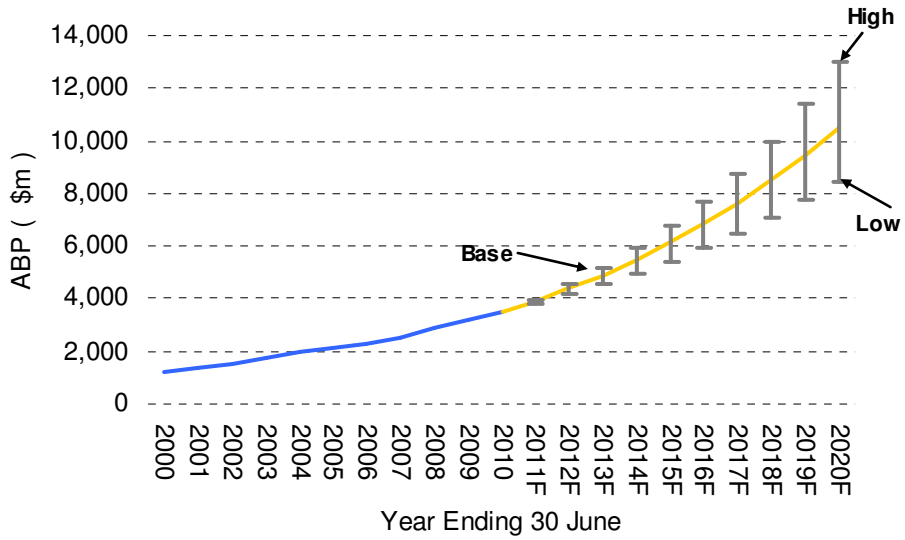
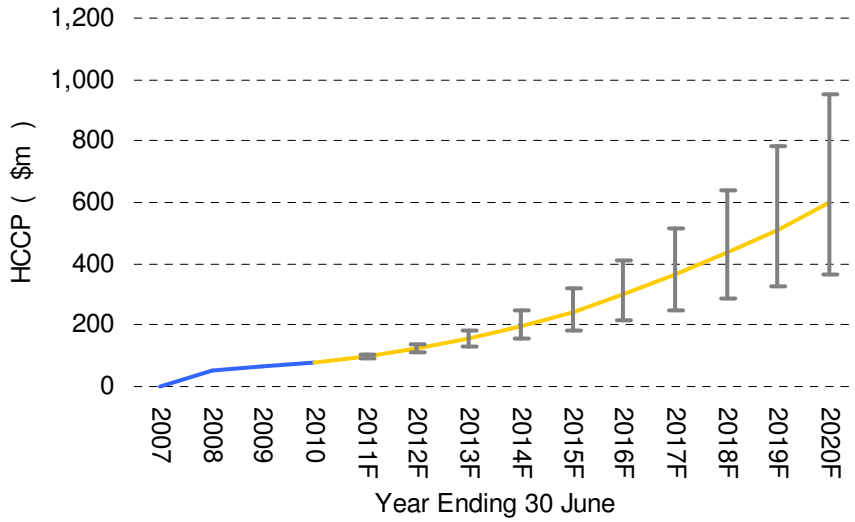


Figure 3.2 – Estimated Future Size of HCCP



The ABP is expected to be between $8.5 billion and $13 billion by 2020, compared to $3.5 billion in 2010. Our base estimate for 2020 is $10.5 billion, which is three times the 2010 amount.

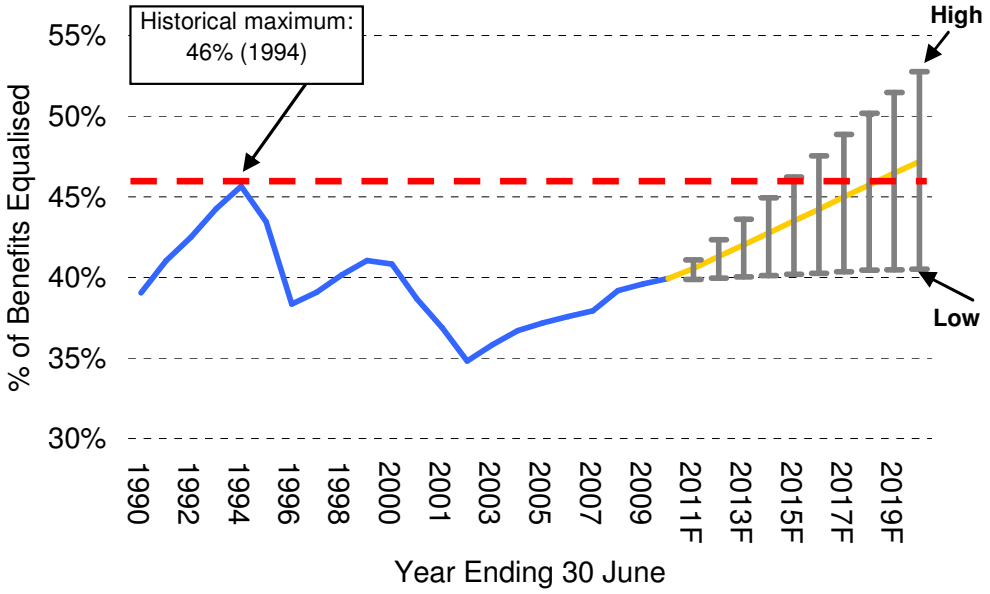
The HCCP is expected to increase from $80 million in 2010 to $600 million in 2020 (over seven times the 2010 amount). HCCP is expected to increase from 2.2% of the total risk equalisation amount in 2010, to around 5.3% in 2020.

The HCCP covers claims above a fixed threshold of $50,000. Claims inflation means an increasing number of claims are expected to exceed the threshold, which is why the HCCP grows faster than the ABP.

Proportion of Benefits Equalised

Figure 3.3 below shows the proportion of total hospital benefits that are shared through risk equalisation. We show the proportions corresponding to the best estimate and our optimistic and pessimistic scenarios.

Figure 3.3 - Projected Proportion of Benefits Equalised



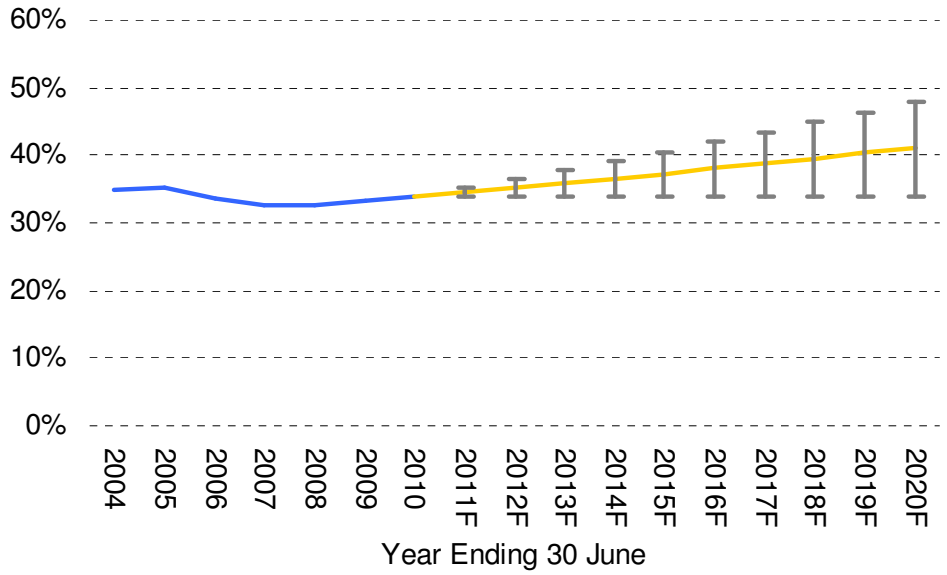
Our best estimate of the proportion of benefits shared in 2020 is 47%. The optimistic and pessimistic estimates are 40% to 53% respectively.

Over the last 20 years the proportion of hospital payments covered by risk equalisation has ranged from 36% (in 2002) to 46% (in 1994) – refer to Figure 1.1 for further details.

Average Subsidy

The chart below shows calculated deficit as a proportion of the average hospital cover premium.

Figure 3.4 - Calculated Deficit as a Proportion of Average Hospital Premium



Note that Figure 3.4 presents the information in Figure 3.3 relative to premiums rather than claims. This explains why the two figures have similar shapes.

Insureds under 55 are not covered by the risk equalisation arrangements (other than by the HCCP, which represents a small proportion of the total risk equalisation amounts). The calculated deficit can therefore be thought of as a subsidy paid by younger insureds to older insureds.

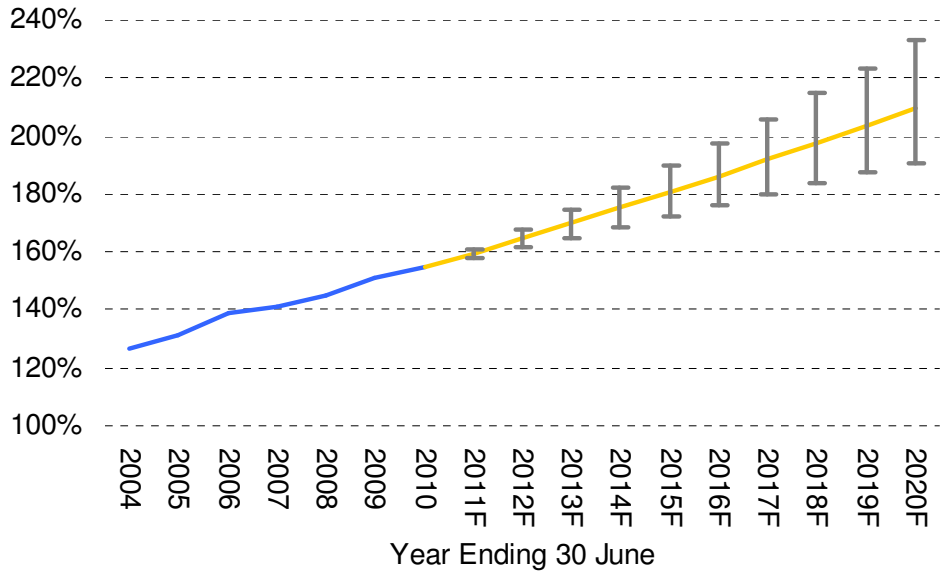
The figure shows that by 2020 we expect 41% of hospital premiums for younger people to be a subsidy to older policyholder. This compares to a 34% subsidy percentage in 2010.

Note that these figures relate to "average" hospital premiums. Our comments below on MLS consider the subsidy percentage for cheaper products.

Cost of Insurance

Figure 3.5 compares forecast average hospital premiums to AWE. In producing the figure we estimated the proportion of premiums on combined products that covers hospital costs, and how that proportion will change over time.

Figure 3.5 – Annual Hospital Premium as Proportion of AWE



Average annual hospital insurance premiums are expected to increase from 1.6 times AWE in 2010 to 2.1 times AWE in 2020.

Health care costs tend to increase faster than AWE, and this is the main reason for the changes shown in Figure 3.4. Affordability issues are relevant to risk equalisation because low cost claimants are expected to be more sensitive to premium increases than people who regularly claim on health insurance.

Medicare Levy Surcharge (MLS)

The MLS arrangements penalise people with incomes above certain levels that do not purchase private health insurance. This intentionally adds a level of complexity to value for money considerations, in that people may purchase insurance they don't really want or need in order to avoid tax.

Some insureds will be "grudge purchasers" of PHI, ready to lapse as soon as the price of insurance exceeds the tax saved. These insureds will often be purchasing the most basic hospital products, where risk equalisation costs form a significant component of the premium.

To illustrate this point, consider the example of a 30 year old single person earning $100,000 per annum in 2010. If she purchases private health insurance, her tax bill reduces by $1,000 (1% of income) and she contributes over $500 to the risk equalisation pool.

The following table compares the risk equalisation contribution and tax saved in 2020. We assume that income increases in line with AWE, and that MLS is 1% of income if not

insured. The risk equalisation forecasts are taken from our models, and assume the risk equalisation pool does not cover any of the claim costs for this policyholder.

Table 3.1 - Net Tax Saving for 30 Year Old Single on $100k pa in 2010

	2010 Actual	Optimistic Estimate 2020	Best Estimate 2020	Pessimistic Estimate 2020
Contribution to Risk Equalisation Pool	$505	$920	$1,223	$1,590
Tax Saving for 30 year old on $100k pa	$1,000	$1,480	$1,480	$1,480
Difference	$495	$560	$257	($110)
Difference / Tax Saving	49%	38%	17%	(7%)

The cost of risk equalisation represents an absolute minimum premium rate. Premiums will also need to cover some of the insurer's expenses and profit margin, and the cost of any benefits provided.

At present there are plenty of PHI products available for under $1,000, meaning that the decision to insure should be straight forward. In 2020 insurers may be unable to provide even a basic product for under $1,500 because of high risk equalisation costs.

Given the current level of management expenses for the industry are around 9% (and possibly higher than that for the "cheaper" products), it is difficult to envisage the cheapest product being available for less than the "grudge purchaser's" tax saving in either of the best or pessimistic estimates.

While "grudge purchasers" may buy policies that pay a low level of benefits, they pay the same dollar contribution to the risk equalisation pool as people purchasing high levels of cover. The growing cost of risk equalisation would mean that some people who currently purchase insurance only to avoid the MLS may no longer decide to insure in 2020. If enough grudge purchasers were to leave, the loss of their subsidy support could create a significant pressure on premiums.

The "Value Equation"

In practice the number of "grudge purchasers" might be fairly small. We note that PHI participation rates did not change significantly following recent changes to the MLS arrangements, which increased the income level from which additional taxes apply. Following the MLS changes, extra taxes for not insuring are only levied on fairly high incomes (above around $80,000 for singles, or $160,000 for couples and families). Therefore people liable for MLS may be the group best placed to pay rising health insurance premiums.

For any customer, the decision to purchase PHI will depend on the perceived value for money. For grudge purchasers, we have defined this as the net tax saving, and when this becomes negative for them they may stop purchasing. Our projections indicate this may be the case for some grudge purchasers by 2020.

Whilst it is difficult to conclude whether or not the system would reach a tipping point, the significant increases in the risk equalisation component of overall benefits would push the system closer towards wherever that tipping point may be.

The growing size of the subsidy could lead to lapsing of some grudge purchasers, as well as others who rarely claim on their policies. However, these are the people a community rated systems needs to retain, and losing them would be a movement in the direction of a tipping point.

3.3 Methodology and Assumptions

This section provides a brief summary of our modelling methodology and shows some of the key assumptions.

Best Estimate - ABP

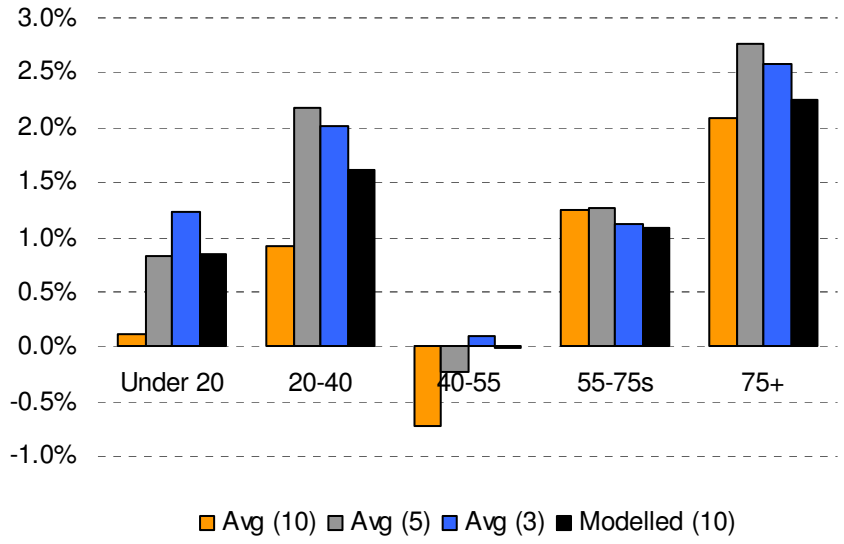
We considered the ABP and HCCP separately. For the ABP, key assumptions required were:

- Population data
- PHI participation rates – the take up rate for PHI cover amongst the population
- The claim frequency of hospital treatment episodes by age group and changes in claim frequency over time
- The cost of each hospital episode and level of inflation in hospital service costs.

For population data we used the most recent best estimate forecasts from the Australian Bureau of Statistics. In other cases we use data publically available from PHIAC.

Figure 3.6 shows historical changes in participation rates by age group and our selected best estimate assumptions. The historical changes shown are averages for the last three, five and ten years. Note that the figures represent the percentage change in participation (that is, an increase in the participation rate from 50% to 51% is a 2% increase).

Figure 3.6 – Participation Rate Assumptions



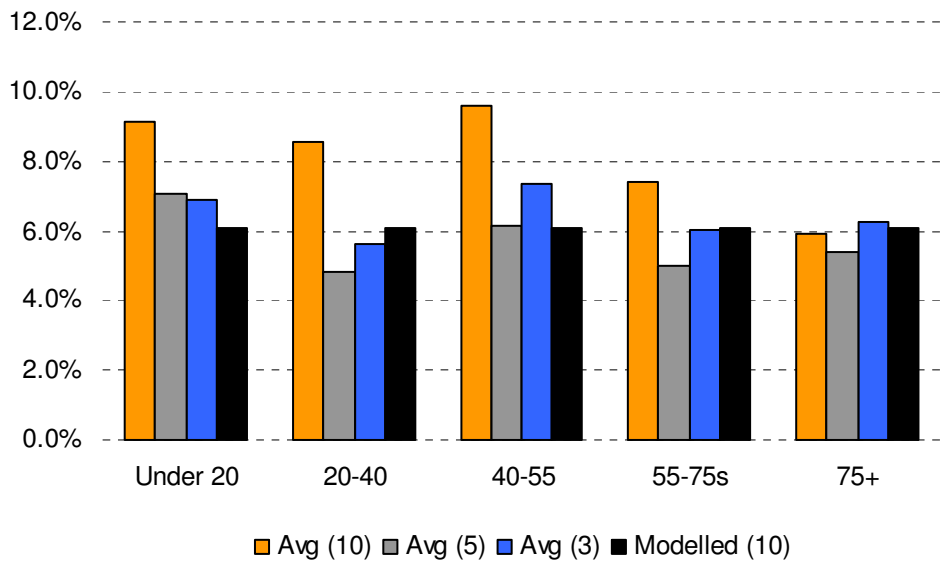
Private health insurance has become more popular amongst under 40s and over 75s, with stable participation rates between those ages. Our best estimate assumptions assume the high growth rates experienced over the last five years will moderate. In particular, we have assumed growth in participation rates will remain above the ten year average for under 55s, and around the ten year average for over 55s.

The assumptions in Figure 3.6 result in around 50% of Australians being covered by hospital insurance in 2020, compared to 45% in 2010. The 2020 participation rate is similar to experience from the mid 1980s, and continues the growth in insurance participation seen in the last few years.

We have not made an adjustment for changes in premium rebates currently proposed by government. We note that the changes only impact families on high incomes, and the government has proposed changes to MLS arrangements to discourage people who lose part of the rebate from discontinuing their insurance.

Figure 3.7 shows the selected best estimate claim inflation assumptions, combining service cost and utilisation inflation for presentation purposes.

Figure 3.7 – Claim Inflation Assumptions



We selected a single assumption for all age groups for our best estimate, broadly in line with recent experience.

Best Estimate - HCCP

Our estimates were produced using a simulation model of average claim size and claim frequency. The model was calibrated to actual HCCP data published by PHIAC, which includes the number of claims in the HCCP and the total pooled cost. We used publically available claim size data from recent AHIA claims surveys.

The projections allow for growth in the number of insureds, increases in utilisation rates and service cost inflation in line with the ABP assumptions.

Range of Estimates

We have produced a range of estimates as a guide to the level of uncertainty in our projections.

For the pessimistic (high) estimate we assumed:

- Greater ageing of insureds: We have assumed that PHI participation rates for the over 75s cohort increase at twice the rate observed in recent years, while PHI participation for 20-40 year olds reverts to the same level as ten years ago
- Higher inflation for older insureds: We assumed a 1% increase in the annual claims inflation rate for people over 75.

For the optimistic (low) estimate we made the opposite adjustments to these assumptions, specifically:

- Less ageing of insureds: We have assumed that PHI participation for 20-40 year olds increases at twice the rate of increase in the last 3 to 5 years, while participation rates for the 75+ cohort stabilise at current levels
- Lower inflation for older insureds: We assumed a 3% reduction in annual claims inflation for people over 75.

4 Alternative Scenarios

We estimate that the proportion of benefits equalised will continue to increase through to 2020, which has consequences for the affordability of private health insurance. This section considers a range of alternative scenarios.

The scenarios are not intended to provide an exhaustive list of possible risk equalisation systems, but rather demonstrate the drivers of change in risk equalisation cost.

4.1 Scenarios

We considered the following scenarios:

Changes to the current system

1. Scale back ABP to maintain a constant proportion of benefits equalised. Specifically, around 40% of benefits were equalised in the year ending 30 June 2010. In order to maintain the proportion of benefits equalised at this level, the amount of benefits pooled for each age group would need to reduce by 13%. For example, the proportion of benefits equalised for 65-69 year olds would reduce from 60% to 52% by 2020.
2. Remove under 65s from the ABP over the next ten years (that is, gradually reduce the percentage of benefits equalised to zero for these age groups).
3. Index HCCP threshold. The HCCP currently includes claims over $50,000, and we have modelled the impact of indexing this threshold by 3% per year.
4. Abolish HCCP.

These changes have the effect of passing a greater proportion of future benefit increases onto individual insurers, rather than spreading the costs through risk equalisation. Such changes would likely be popular with insurers that are net contributors to the current risk equalisation arrangements, but unattractive to those insurers who are net recipients.

Average claim costs increase from around age 40 (refer to Figure 1.2), so starting risk equalisation from age 55 is somewhat arbitrary. Scenario 2 demonstrates the effect of changing the age groups covered by removing 55-65 year olds from the pool over the next ten years.

While the threshold for the HCCP has remained fixed at $50,000, the number and cost of claims are continually increasing. Claims exceeding $50,000 will be much more common by 2020, increasing the amount pooled through the HCCP.

We consider two HCCP scenarios, one which indexes the $50,000 threshold at 3%, and one that abolishes the pool. High cost claim measures were introduced largely at the request of smaller insurers, where an occasional large claim could have a noticeable impact on financial results. Insurers requiring cover for large claims could be permitted

to purchase cover from other health insurers, or possibly from general insurance companies.

Industry Participation

5. Compulsory insurance – participation rates increased to 100% for all age groups
6. Government pays for health insurance for everyone aged 20-30.

We modelled these scenarios by increasing participation rates. For scenario 6, we also assume higher participation for over 30s by the end of the decade as some people continue cover after the free period.

We are not proposing that the government introduce either of these changes. Rather, the scenarios indicate the sensitivity of risk equalisation to changes in industry participation.

Alternative Systems

7. Risk equalisation covers 79% of costs for over 65s, and no HCCP. This is the pre-2007 risk equalisation system, other than it does not allow for hospitalisation for under 65s beyond a set period
8. A fully funded risk equalisation model
9. Risk based capitation.

The current risk equalisation system is a "pay-as-you-go" (PAYG) model, as young insured people subsidise the current year insurance of older people. In order for those young people to receive a subsidy when they age, the model requires a new generation of young people to choose to insure.

Under a funded model, people pay additional premiums when they are young to cover their own increasing care costs as they age. A wide range of models would be possible, for example, depending on whether the additional premiums are pooled or not, and what to do if future health costs are not as expected. There would also be many issues to address in moving from a PAYG to a fully funded system.

Under risk based capitation, amounts received by insurers from the risk equalisation pool would depend on expected rather than actual claim costs. For example, an insurer covering an elderly policyholder with multiple chronic illnesses and a number of recent claims would receive a large subsidy.

Insurers are incentivised to contain claim costs through effective contracting and management of claims or, better still, by preventing claims from occurring. The incentive for an insurer to manage claim costs is arguably greater than under the current risk equalisation arrangements, where over 80% of claim costs can be shared for some claimants.

A risk based capitation approach is used in the Dutch private health system, and has been proposed in legislation enacting the US health reforms. Risk based capitation was proposed in Australia prior to the introduction of the current arrangements, but was withdrawn following opposition from the industry.

4.2 Summary of Results

The following table compares each of the scenarios listed in Section 4.2 above to the current risk equalisation arrangements, using the system features listed in Section 2. We also modelled the proportion of benefits expected to be equalised in 2020 for each scenario.

There are many variations of both funded and risk based capitation models, and we have not modelled a particular variation for this paper.

Figure 4.1 – Modelling of Alternative Scenarios

		Required Features		Desirable Features	
	% of Benefits Equalised in 2020	Subsidise High Cost Claimants	Maintain Affordability for All	Risk Mitigation	Simplicity
Current System	47.2%				
Changes to Current System					
1) Scale back ABP to maintain proportion of benefits equalised	40.1%	Worse	Better	Slightly better	Slightly worse
2) Phase out risk eq for under 65s over 10 years, otherwise unchanged	42.1%	Worse	Better	Slightly better	Slightly better
3) Index HCCP threshold	45.2%	Slightly worse	Slightly better	Slightly better	Slightly worse
4) Abolish HCCP	44.6%	Slightly worse	Slightly better	Slightly better	Better
Industry Participation					
5) Compulsory Insurance	44.2%	Slightly worse	Slightly better	Slightly better	Unclear
6) Free health care for 20-30 year olds	42.9%	Unchanged	Better	Unchanged	Unchanged
Alternative Systems					
7) 79% of costs for over 65s	43.4%	Worse	Better	Slightly better	Slightly better
8) Funded model	NA	Unclear	Unclear	Better	Worse
9) Risk based capitation	NA	Better	Better	Better	Worse

Section 2 also noted equity and flexibility as desirable features of risk equalisation. Since each of scenarios 1 to 7 reduce the proportion of claims risk equalised they may be considered unfair by insurers that are net recipients from the risk equalisation pool.

In assessing each scenario, we have assumed that any reduction in the proportion risk equalised should increase incentives for insurers to manage costs, encourage risk mitigation initiatives and make PHI more affordable for everyone.

Changes to the HCCP have a fairly small impact on the overall proportion risk equalised, but are arguable less controversial than the other scenarios. In terms of the total percentage pooled, the effect of indexing the HCCP threshold is similar to abolishing the HCCP entirely.

Increasing participation of young people in PHI significantly reduces the proportion of benefits equalised. More general increases in PHI participation have a smaller impact on the growth of the risk equalisation pool, as they bring in a range of old and young policyholders.

Scenario 7 is similar to the previous risk equalisation arrangements, except that long hospital stays for under 65 are not modelled. Comparing this to scenario 4 (current risk equalisation arrangements without HCCP) suggests a slightly lower proportion of total costs is shared under the previous arrangements than the current arrangements.

With the exception of the funded model and risk based capitation, none of the scenarios significantly increase the incentive for risk mitigation by insurers. The ability of customers to switch insurers limits incentives for risk mitigation, especially those initiatives that produce benefits far into the future. However, competition for customers is also an incentive for insurers to control costs.

Risk based capitation systems are able to target subsidies directly at claimants with high expected claim costs, including those aged under 55 that are not well served by the current risk equalisation arrangements. The need to manage claim costs within the risk budget should encourage insurers to contain costs, possibly through disease prevention initiatives.

Either the risk based capitation or funded model is likely to be more complex than the current risk equalisation arrangements, although modern analytical methods mean either approach could be applied in practice.

4.3 Conclusion

Previous risk equalisation arrangements have been considered unsustainable once the proportion of benefits equalised approached a high level. Scenario 2 limits the proportion of benefits equalised to the current levels. This scenario does not involve a sudden loss or gain for any insurer, and is derived from the current arrangements. Some scaling back of the current scheme would appear to be a simple way to improve the longevity of the current arrangements.

The scenarios also show that the sustainability of the risk equalisation arrangements depend on participation of young people in PHI. While scenario 6 (free insurance for 20-30 year olds) is probably not practical, government should consider incentives for young people as a priority. Requiring overseas visitors and students to contribute to risk equalisation may be a possibility here. The current arrangements will become unsustainable if participation of young people in private health insurance were to reduce significantly.

We feel that some changes to the HCCP are appropriate, whether this be abolition or indexation. At a minimum some form of indexation would appear necessary to ensure only the largest claims fall inside the HCCP.

Two countries which have recently reviewed private health insurance arrangements (the US and the Netherlands) have opted for a risk based capitation approach to risk equalisation. These schemes measure up well against our criteria for sustainability, and so should remain under active consideration in Australia.

If risk based capitation is the best system for Australia, making the change sooner rather than later would better allow any adverse impacts on individual insurers to be addressed, for example, by phasing in new arrangements over a number of years.

A Historical Sources

In preparing the historical information in Section 1 of this paper we considered the following sources:

- Adventures in Health Risk – A History of Australian Health Insurance - Andrew P Gale and David Watson
- One Price Fits All – A Review of Community Rated Private Health Insurance – Andrew P Gale
- A Historical Perspective on Risk Equalisation for Private Health Insurance in Australia – Paul Collins
- Legislation used to effect the significant changes (for example, the National Health Act as amended at various dated)
- Health Insurance – Report of the Commonwealth Committee of Enquiry – 1969 (the "Nimmo Report")

In addition we referred to various PHIAC reports to prepare the financial information in the paper.

We are grateful to the staff of the NSW State Library for finding some of the older materials.