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Is Private Health Insurance Affordable in Australia?

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Is private health insurance affordable in Australia?

By Barry Leung for the 2017 Actuaries Summit

Executive Summary

Australia's health care system is complex. It is funded by a mix of government revenue, private health insurance (PHI), accident compensation schemes, and patients' out of pocket payments.

With various forms of government support in place, around half of the Australian population has PHI cover. In recent years, PHI affordability has come into question as the rate of increase in PHI premium far exceeds the growth in wages. To date, there has not been a documented way of illustrating PHI affordability.

This paper advocates the adoption of an affordability index using equivalised household income and health insurance premium, net of private health insurance rebate, as the common currency for future discussions on affordability.

The development of this index also provides valuable insights into the proportion of household income being consumed by health insurance premium, and allows projection of PHI affordability in the future.

Introduction

Over half of the Australian population has some sort of PHI cover. There are various "carrots and sticks" introduced by the government which entice members to enter the market and retain cover, including the private health insurance rebate, Lifetime Health Cover[1] and the Medicare Levy Surcharge[2].

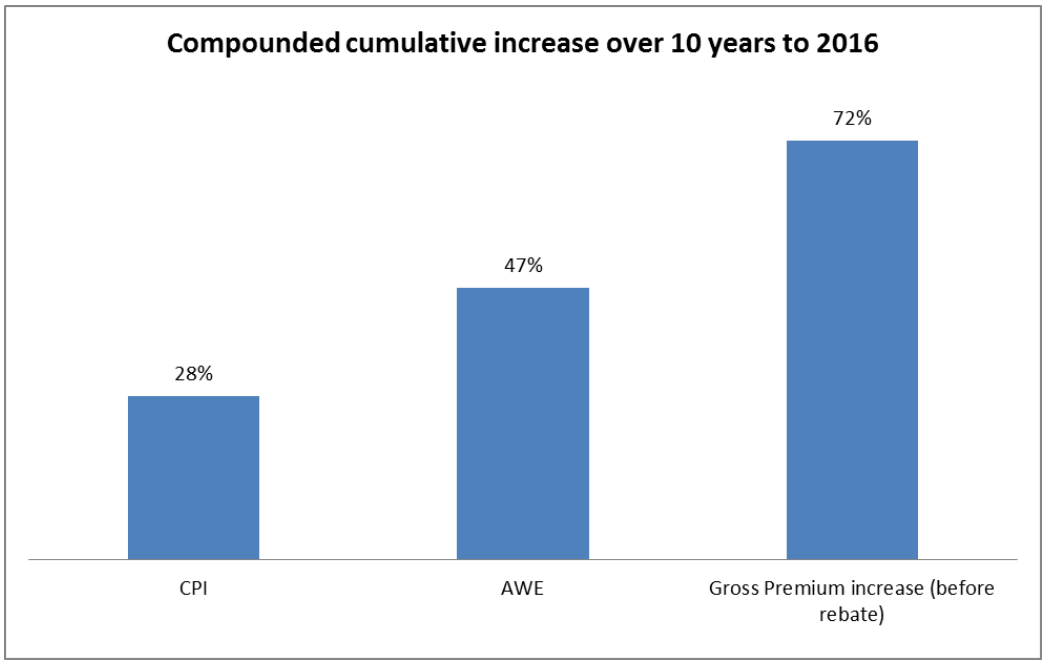
The average industry gross PHI premium increase (i.e. before the private health insurance rebate is taken into account) has ranged between 4% and 6% per year over the last 10 years[3]. The rate of increase has far exceeded the increase in consumer price index (CPI), and more recently the increase

[1] Under Lifetime Health Cover, an additional loading is paid on top of a private hospital premium at a rate of 2% for each year a person is aged over 30 when hospital cover is first purchased (or repurchased after having lapsed). This is subject to a maximum of 70% with loading removed once hospital cover has been held for 10 continuous years. There are exemptions for those born before 1934 and special circumstances for new migrants, Australian's overseas, and members of the Australian Defence Forces (ADF) and Department of Veterans' Affairs benefit recipients.

[2] The Medicare levy surcharge (MLS) is a tax on people that earn over a certain amount and don't have private health insurance hospital cover. The surcharge rate varies between different income thresholds.

[3] It should be noted that this is the average industry increase, and individual products can vary quite significantly from the average.

in average weekly earnings (AWE). The graph below shows the cumulative increase in CPI, AWE and gross premium increase over the 10 years to 2016:



This difference in growth between CPI, AWE and PHI premiums implies an increasing proportion of household income is allocated to health insurance premiums, which has led to a national conversation on the affordability and viability of PHI in Australia.

Despite the high level of public attention, there does not seem to be a consistent definition of affordability and how to measure it. The aim of this paper is to utilise publicly available data to encourage a systematic measure of affordability, which enables all stakeholders to utilise consistent data and analysis in their discussions.

The paper is divided into two sections:

- Section 1 – an exploration of the affordability concept, and the proposal of a PHI affordability index; and
- Section 2 - projection of the likely affordability level under different premium increase and economic scenarios.

Section 1 - What is "affordability"?

Affordability is a subjective concept. According to the Oxford dictionary, "affordable" is defined as "inexpensive or reasonably priced". This definition implies a value judgement by the purchaser, that is, what utility would the person gain from the purchase for the price he/she is willing to pay. This implies any discussion of affordability must encompass both price and the value derived from the product by the purchaser.

1.1 Measuring utility in the PHI environment

The "value" that a consumer derives from a health insurance policy is difficult to gauge. One of the reasons is the complex nature of the product. PHI can be seen as:

- A financial risk mitigation product for medical events (like heart surgery) through hospital insurance, with a choice of doctor and shorter wait times for elective surgery; or
- A cash transfer mechanism which allows the purchaser to access everyday healthcare supplies and treatments (like preventative dental, spectacles and remedial massage) through general treatment insurance; or
- A way to avoid future penalties imposed through legislation, in the form of higher premium loadings for delayed purchase (under the Lifetime Health Cover) and the Medicare Levy Surcharge; or
- A combination of the above (if both hospital and general treatment covers are purchased).

The utility gained from health insurance is also influenced by the "after purchase" experience. Market research and studies show PHI policyholders often experience out of pocket expenses, in addition to policy excess and co-payments, when they receive treatment[4]. These out of pockets, sometimes not known in advance, are causing increasing levels of frustration amongst policyholders.

1.2 What is the right "price" to assess PHI affordability?

The "price" side of the affordability discussion is just as complex. Because of the community rating arrangements in Australia, every person pays the same PHI premium regardless of age, gender or health status, for the same product (with certain exceptions under lifetime health cover) in a given state.

As health insurers are not allowed to risk-rate, they have, over time, designed products which offer different treatment coverage in an attempt to appeal to different risk segments of the market. The wide variety of products available makes selecting a "standard" health insurance policy to illustrate affordability challenging.

The level of private health insurance rebate introduces further complexity to the price paid by policyholders. When the rebate was first introduced in 1999, it was a flat 30% of the gross premium across all PHI products. Under successive governments, the rebate level has slowly evolved to take into account the age of the policyholder, taxable income, level of Lifetime Health Cover loadings, and the CPI increase in any one year. Depending on the year and individual circumstances, different cohorts of policyholders will enjoy different level of government rebate (currently ranging from 0% to 34.579%).

Despite the challenges in measuring value and defining the right price, it is still worthwhile developing a measure to assess PHI affordability. Firstly, it provides a common language for

[4] For example, see Gordon G.L., Walker S.M., Mervin M.C., Lowe A., Smith D.P., Gardiner R.A. & Chambers S.K. (2017), European Journal of Cancer Care, *Financial toxicity: a potential side effect of prostate cancer treatment among Australian men.*

stakeholders to communicate around affordability. Secondly, tracking affordability over time highlights any pressure that households may face due to increasing health insurance premiums.

1.3 The affordability index

The construction of the affordability index involves three different stages:

1. Consider a standardised approach to classify PHI products;
2. Develop the methodology in calculating the index; and
3. Calculate the index and assess the outcomes.

Stage 1: Standardised approach in product classification

There are two main types of PHI product in Australia – Hospital and General Treatment (or Extras). Policyholders can purchase either of them on a standalone basis, or both of them as a combined product.

The Commonwealth Ombudsman maintains a website[5] that allows the public to compare all PHI policies available in Australia. The website classifies all health insurance products into different categories[6]. For hospital products, the product categories are:

- Comprehensive
- Medium
- Basic
- Public

And for general treatment, the product categories are:

- Top
- Medium
- Basic

The classification methodology for both hospital and general treatment products can be found in Appendix 1.

The classification of a combined product (hospital and general treatment together) will depend on the classification of each of its constituent parts.

While some may argue the classification is imperfect, it is nevertheless a helpful platform for the purpose of this research.

[5] The website is privatehealth.gov.au, maintained by the Commonwealth Ombudsman

[6] This classification system was recently withdrawn from the Ombudsman website. Classification now incorporates an algorithm that reflects user filled preferences for coverage. The federal government is currently considering a new "Gold, Silver Bronze" product classification system (as per the work plan of the Private Health Ministerial Advisory Committee).

Stage 2: Selecting the calculation methodology

In researching this paper I considered two particular calculation methodologies for determining an affordability index, namely:

- The Housing Industry Association (HIA) housing affordability index; and
- The "catastrophic" method of calculating medical service affordability.

The HIA affordability index essentially considers whether a buyer with an average income could purchase a median priced dwelling and do so affordably. A number of assumptions are made around the typical mortgage and the average income. A summary of the calculation methodology and assumptions can be found in Appendix 2.

The "catastrophic" medical service affordability calculation looks at affordability at both a micro and macro level. It denotes the total cost of service or commodity as a % of the total household income. For example, this method can be used to calculate the affordability of the cost of medicine across different income groups within a particular country. A summary of this methodology is in Appendix 3.

Both methods provide possible frameworks as the basis of the PHI affordability index calculation. For the purpose of developing a PHI affordability index, I have adopted the following approach to calculate affordability of health insurance products:

$$AI = NP / E \times 100, \text{ where}$$

AI = PHI affordability index
NP = Net premium of health insurance policy (i.e. after the private health insurance rebate)
E = Equivalised disposable household income[7]

Using this approach, the higher the affordability index, the higher the proportion of household income is used to pay for health insurance.

The inputs for this measure were selected for the following reasons:

- The net premium (i.e. after the impact of the private health insurance rebate) is the premium that policyholders will be paying upfront, and is the true outlay experienced by consumers.

- Using household income is better than other earnings measure, like average weekly earnings, because household income also takes into account other receipts like government transfers (e.g. age pensions) and other investment streams (e.g. super annuities), which is particularly useful when assessing PHI affordability for the over 65s.

The concept of equivalisation is important. As household size increases, consumption needs also increase but there are economies of scale. An equivalence scale is used to adjust household incomes to take account of the economies that flow from sharing resources and enable more meaningful comparisons across different types of households. Equivalising factors are calculated based on the

[7] Extracted from *Australian Bureau of Statistics. 6523.0 Household income and wealth, Australia, 2013-14.*

size and composition of the household, recognising that children typically have fewer needs than adults.

The ABS uses the OECD-modified equivalence scale which assigns a value of 1 to the household head, 0.5 to each additional person 15 years or older and 0.3 to each child under 15 years. For a lone person household equivalised income is equal to actual income. For households comprising more than one person, it is the estimated income that a lone person household would need to enjoy the same standard of living as the household in question.

Equivalisation also simplifies the affordability index calculation. Because household income is standardised to the income of a lone person, the net premium payable would also be the premium payable by a lone person, or in health insurance language, a singles policy.

Data requirements

The index calculation is constrained by the data available in the public domain. The base year for the affordability calculation is financial year 2015-16.

The latest equivalised household income data available from the ABS is for the financial year 2013-14. The equivalised household income needs to be adjusted to the 2015-16 level. As household income constitutes a number of components, not just wages, an adjustment based on Average Weekly Earnings (AWE) only is probably inappropriate. This paper therefore uses the change in CPI to adjust the household income level.

Premiums for the period April 16 to March 17 of all singles health insurance policies available in the state of Victoria were collected via the Commonwealth Ombudsman website during the preparation of this paper.

Stage 3 Calculation of the index

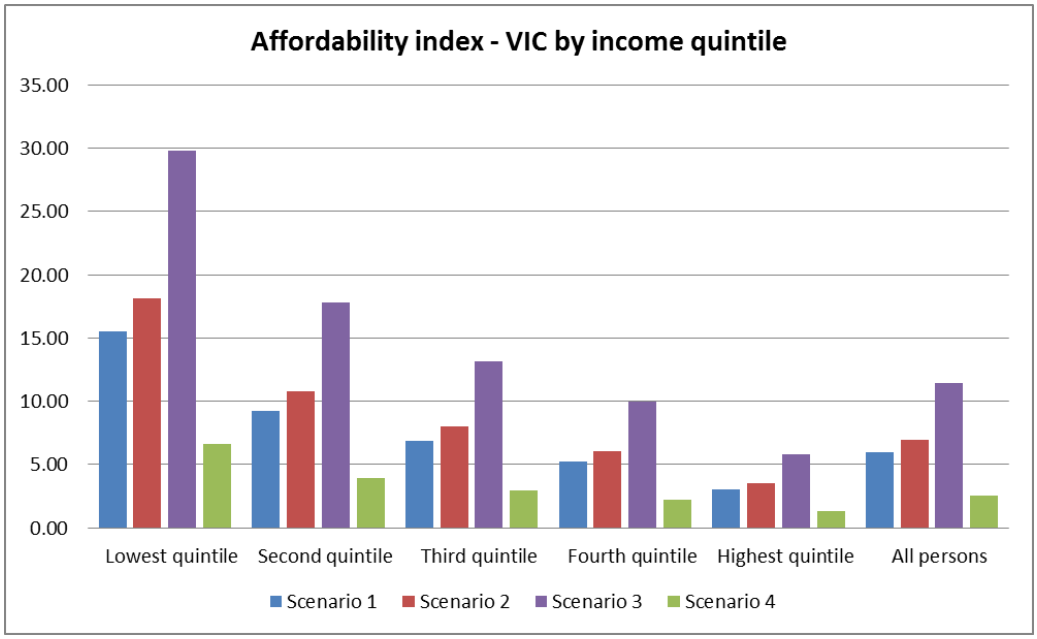
The index is based on the "average" net premium of all PHI policies relevant to the scenario under consideration. The average net premium is the weighted average price of all relevant policies, regardless of excess or co-payment level. The weights are based on the fund market share in Victoria by whole fund policies as at 30 June 2016 (the latest publicly available data for market share). Please note using whole fund policy market share as weights is imperfect, as that may not represent the true market share in a particular product segment.

I have calculated the PHI affordability index under each of the following scenarios:

1. A person purchasing an "average" combined product (with top hospital and comprehensive extras), with no lifetime health cover loading applied.
2. A person purchasing an "average" combined product (with top hospital and comprehensive extras), with a 20% lifetime health cover loading applied, assuming that 60% of the total premium of the combined product is the hospital component.
3. A person purchasing the most expensive top hospital and comprehensive extras combined product with no lifetime health cover loading.

4. A person purchasing an "average" basic hospital and basic extras combined product with no lifetime health cover loading applied.

Outcomes for the four scenarios are shown below for the state of Victoria, by different income quintiles[8]:

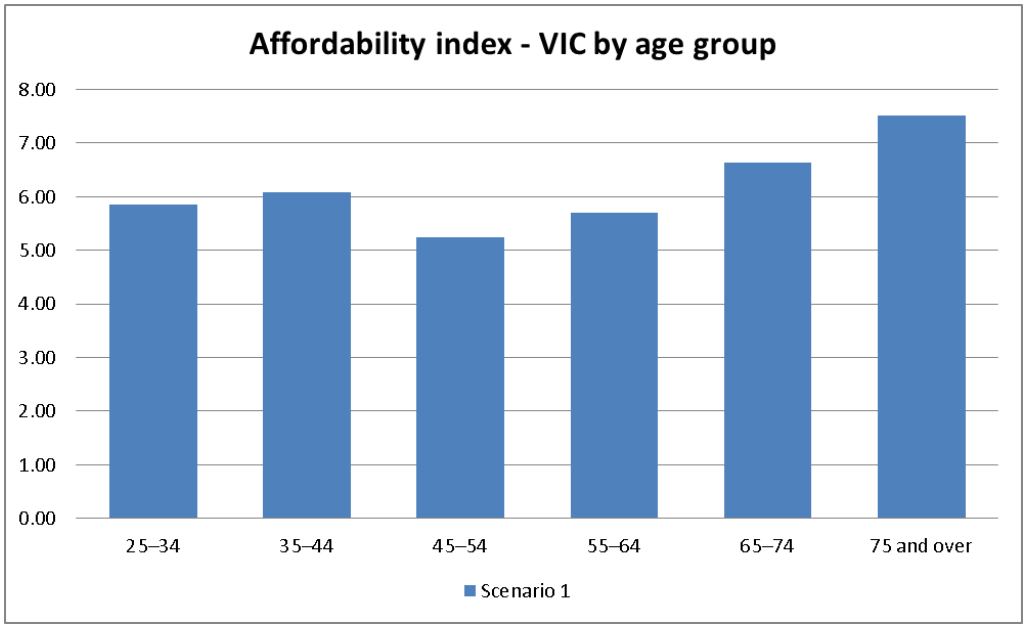


Some observations from the graph above:

- Over 5% of household income can be spent on an "average" top hospital and comprehensive general treatment combined policy for an average household in the population.
- The most expensive comprehensive combined product in the market would consume approximately 12% of an average household's income.
- Over 6% of household income can be consumed by an "average" basic hospital and extras policy in the lowest income quintile.

Analysis by age also provides some interesting insights. Outcomes for Scenario 1 are shown below for the state of Victoria, using the income of an "average" household for each age group:

[8] Quintile = Groupings that result from ranking all households or persons in the population in ascending order according to some characteristic such as their household income and then dividing the population into five equal groups, each comprising 20% of the estimated population



The graph above shows there is a "U" shape relationship between age and affordability. This is because equivalised household income follows an inverted "U" shape pattern across age group i.e. lower income at the younger and older age groups, and higher income for people in their 40's and 50's.

This relationship poses an interesting question for the older population who has the highest health needs. Despite the reducing level of affordability, older age cohorts continue to purchase PHI. This is evident through the high level of PHI participation for the over 65 age group in Australia[9]. This may be due to the relatively high level of household wealth accumulated over time, which is not reflected in the index calculation.

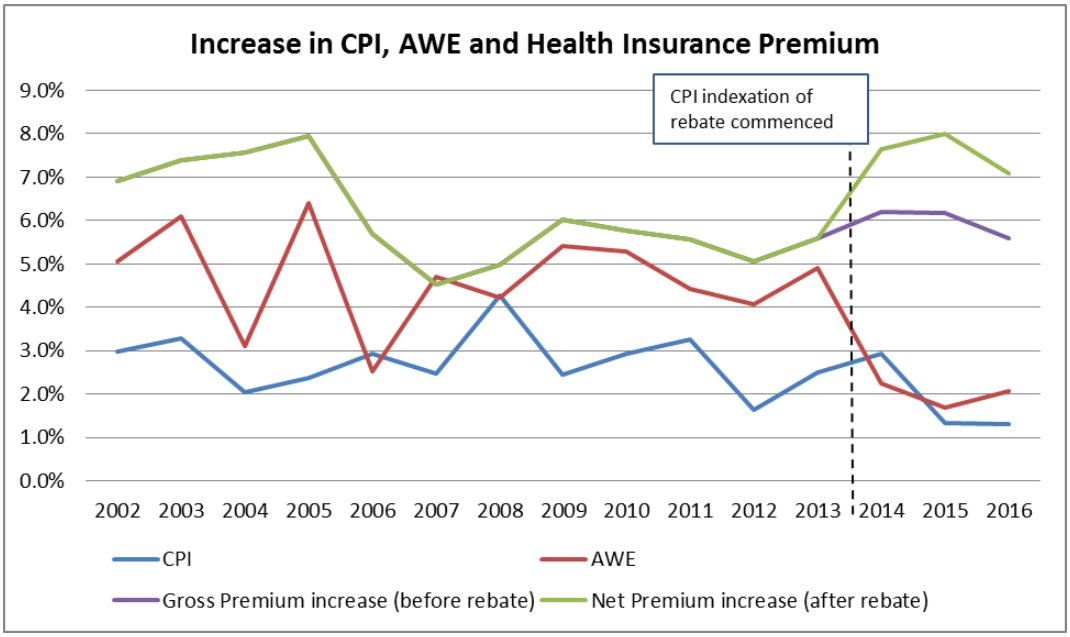
It must be noted that while an "average" household is not the best representation of a typical PHI purchaser, it nevertheless provides an indication of how affordable PHI is to Australians in general.

1.4 Trend analysis

Unfortunately, a time series of the affordability index cannot be created using publicly available information. However, a comparison of the average health insurance premium increase across the industry (before and after the private health insurance rebate), and the change in CPI and AWE, does provide some insights into the ongoing level of PHI affordability.

The graph below shows the trend in CPI and AWE changes against the average industry premium increase over the last 15 years:

[9] PHI participation rate by age group can be found in the *Operations of Private Health Insurers Annual Report,* produced by APRA every year.



While premium increases have always been higher than the increase in CPI and AWE, the difference becomes more obvious since 2014. The widening gap in growth between the CPI, and AWE and health insurance premium indicates affordability has been deteriorating, especially since 2014.

Section 2 - Affordability going forward

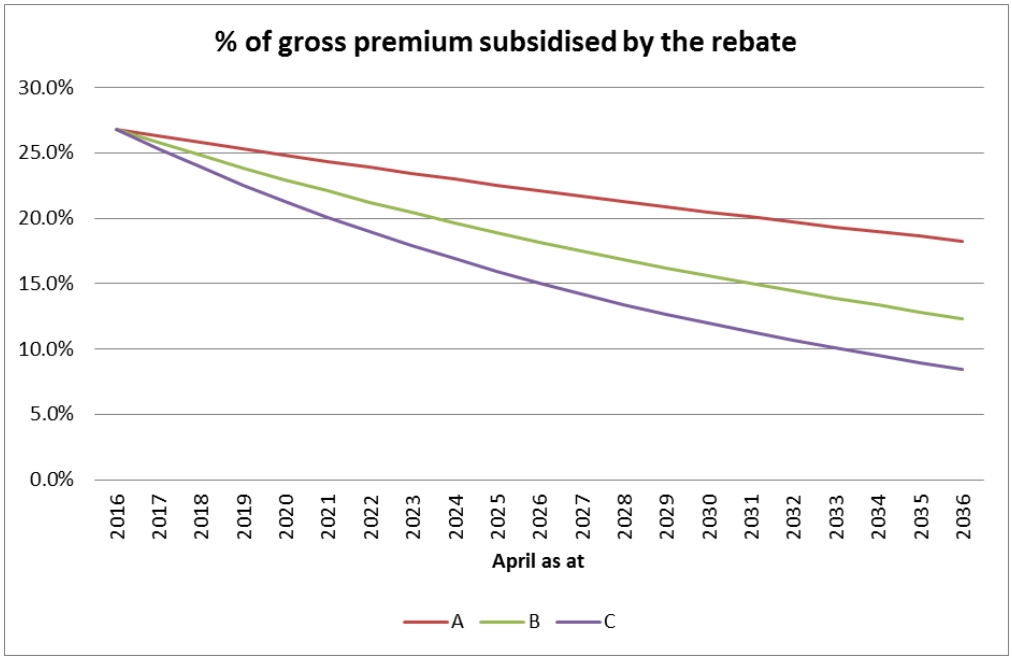
Whilst the absolute levels of future premium increase are not known with certainty, sensitivity analysis of the affordability index, using different premium and CPI increase assumptions, is useful to provide insights into future affordability trends.

The analysis performed in this section considers a single policyholder living in Victoria, who does not attract any lifetime health cover loading, is aged under 65, purchases an "average" combined product (with comprehensive hospital and top extras), and receives the base tier private health insurance rebate. Household income is expected to increase at the assumed CPI level over the projection period.

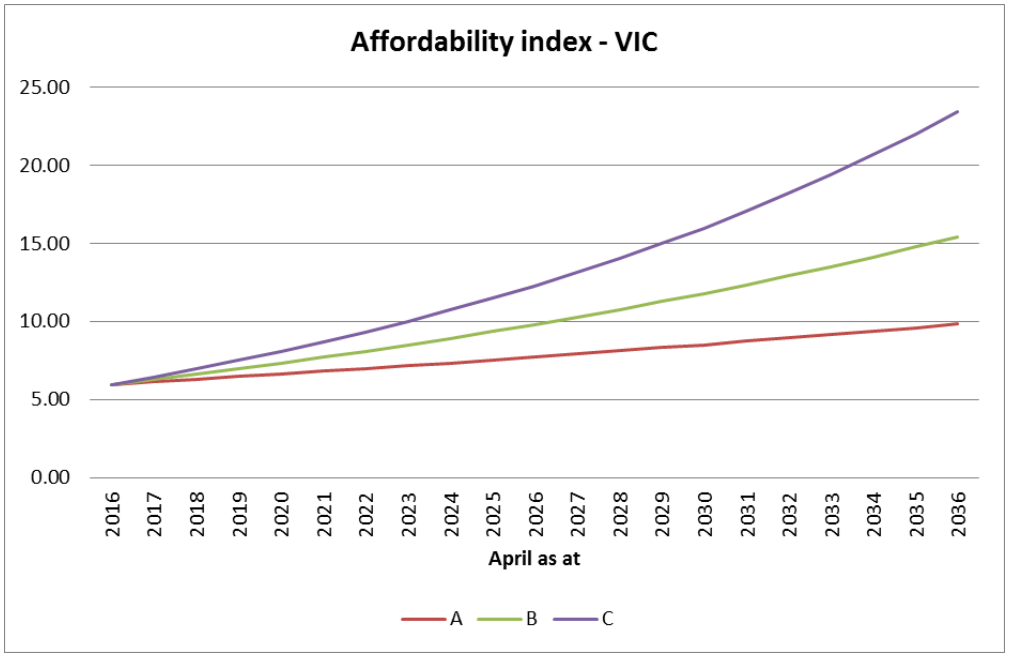
Consider the follow scenarios:

A. Average industry premium growth at 4% p.a. and CPI increase at 2% p.a.
B. Average industry premium growth at 6% p.a. and CPI increases at 2% p.a.
C. Average industry premium growth at 8% p.a. and CPI increases at 2% p.a.

The graph below shows the % of gross premium which will be subsidised by the private health insurance rebate across all three scenarios:



The graph below shows the affordability index over the next 20 years, using the methodology illustrated in section 1.3:



Some observations from the graphs above:

- The level of private health insurance rebate, as percentage of the gross premium, will gradually diminish over time. The rate of reduction will depend on the difference between the change in CPI and average health insurance premium increase across the industry.
- Affordability will decline under all scenarios as net premium becomes a larger portion of household income. For example, under scenario C, nearly 25% of an “average” household income will be spent on health insurance in 20 years’ time. The change in affordability depends on the growth of the net premium payable versus the growth in household income over time.

The continuing decline in affordability will pose a significant challenge for the industry and the level of PHI participation in Australia. The key question is how to reduce the rate of growth in net premium in relation to the growth in household income, and the value of PHI to consumers as the proportion of household income spent on PHI grows. What are the underlying drivers of the growth in health insurance premium? Could these drivers be addressed through market forces or government intervention? How could the industry increase the level of utility gain from the product?

Future research areas

Using the analysis in this paper as a starting point, there are many future research on this topic which will be worthwhile, including:

- State by state analysis of the affordability index;
- Impact of excess and co-payments on affordability;
- Impact of out of pocket expenses incurred during treatment on affordability;
- Tracking of the affordability index over time;
- Inclusion of household wealth in the affordability calculation;
- Testing the threshold that a household will be under PHI "stress" using the index;
- Analysis of the relationship between the affordability index and PHI participation;
- Analysis of the causes of health insurance premium increase.

Additional research would further inform and address current gaps in our understanding of PHI value and affordability.

Conclusion

PHI affordability is an important topic as it directly relates to the sustainability of the industry. A consistent measure of affordability will improve the national conversation. This paper presents a potential measure to achieve that aim, using equivalised household income and net premium paid by consumers. It is easy to calculate and flexible in its application. The index also allows projection of likely PHI affordability over time. The proposed index, however, does have its limitations, like the reliance on aggregated PHI premium data which is not easily accessible, and update of equivalised income over time.

The calculation and outcomes presented in this paper exposes the current level of PHI affordability, and its expected decline under various premium and CPI increase scenarios if there is no market intervention. As the proportion of household income consumed through health insurance increases, there will be an urgent need to address premium growth and the value of PHI.

I hope the paper provides a good start to further research into this very important area.

I would like to acknowledge the contribution by Mr Nicholas Stolk and Ms Bronwyn Hardy on this project. Their encouragement, guidance and feedback on the paper are invaluable.

Appendix 1 – Health Insurance Product classification

Hospital cover

Hospital policies help cover the cost of in-hospital treatment by your doctor and hospital costs such as accommodation and theatre fees. Generally, any medical services listed under the Medicare Benefits Schedule (MBS) can be covered on some form of private hospital insurance. Some services which are not listed on the MBS, such as elective cosmetic surgery or laser eye surgery, are only covered by private hospital insurance to a limited extent or not at all.

Hospital policies fall into four general categories. The classifications are based on the services that are shown as covered, excluded or restricted on standard information statements.

- Top Private Hospital Cover - must cover all services where Medicare pays a benefit;
- Medium Private Hospital Cover - excludes or restricts one or more of the following but includes any services in the basic classification: Pregnancy and birth related services, Assisted reproductive services, Cataract and eye lens procedures, Joint replacements i.e. shoulder, knee, hip and elbow including revisions, Hip and knee replacements, Hip replacements, Dialysis for chronic renal failure and Sterilisation.
- Basic Private Hospital Cover - excludes or restricts one or more of the following: Cardiac and cardiac related services, Non-cosmetic plastic surgery, Rehabilitation, Psychiatric services, Palliative care;
- Public Hospital Cover - covers minimum benefits for treatment in public hospital only. Public hospital waiting lists still apply.

The classifications do not take into account Hospital treatment for which Medicare pays no benefit and do not take into account whether a policy includes an Excess and/or Co-payment or benefit limitation period.

General Treatment cover

General treatment policies (also known as ancillary or extras cover) provide benefits for ancillary services - for example, physiotherapy, dental and optical treatment.

General treatment policies may be offered separately or combined with hospital cover. There are three general categories of policies. The classifications are based on the services that are shown as covered on standard information statements.

- Comprehensive Cover - must include cover for General dental, Major dental (benefit limit must be average or above average for the industry), Endodontic, Orthodontic (benefit limit must be average or above average for the industry), Optical, Non-PBS Pharmaceuticals, Physiotherapy, Podiatry, Psychology;
- Medium Cover - must include cover for General dental, Major dental, Endodontic AND any five of the following: Orthodontic, Optical, Non-PBS Pharmaceuticals, Physiotherapy, Chiropractic, Podiatry, Psychology, Hearing aids;
- Basic Cover - all other policies.

Source: http://www.privatehealth.gov.au/healthinsurance/howitworks/

Appendix 2 – HIA Housing Affordability Index

The HIA Housing Affordability Index is 'purchase affordability' metric which is most representative of an individual owner occupier purchasing a home with a mortgage, although it is also indicative of conditions for others transacting in the housing market. In order to correctly interpret the HIA Housing Affordability Index it is important to understand what it aims to measure.

For the purposes of the index, affordability is defined in accordance with the long standing premise that housing costs become excessive should they exceed more than 30 per cent of their income. The 30 per cent threshold is also used as a guide by lenders when assessing loan serviceability.

It is assumed that the mortgage size is equivalent to 90 per cent of the median home price. This is representative of a situation where the home buyer had a 10 per cent deposit and financed the remainder of the purchase price with a mortgage. A 25 year mortgage term is applied with the loan principal amortised over the lifetime of the loan (i.e. a principal and interest loan). The interest rate is based on the discounted variable mortgage rate reported by the Reserve Bank of Australia. The monthly repayment is calculated using the standard annuity mortgage formula.

Once the value of mortgage repayments has been calculated, a qualifying income is calculated. Qualifying income is a notional amount at which mortgage repayments are equivalent to exactly 30 per cent of income (the lowest income level at which the mortgage repayment would be affordable):

$$\text{Qualifying Income} = \text{Mortgage Repayments} / 30\%$$

The affordability index is calculated by dividing the actual level of earnings by the qualifying income:

$$\text{Affordability Index} = \text{Average Weekly Earnings} \times 100 / \text{Qualifying Income}$$

Source: HIA Economics, HIA Housing Affordability Index Methodology (https://hia.com.au/~/media/HIA%20Website/Files/IndustryBusiness/Economic/publications/Affordability_Index_Methodology.ashx)

Appendix 3 – Practical Measurement of affordability: an application to medicine.

This extract from the Bulletin of the World Health Organisation looks at measuring affordability of medicines in low income countries. It is authored by LM Niëns, E Van de Poel, A Cameron, M Ewen, R Laing & WBF Brouwer.

The article focuses on two different method of calculation, namely:

1. The catastrophic method – this method relies on the ratio of expenditures to total household resources, whereas the second focuses on the residual income after an expenditure. Under the first approach, the payment for a commodity is deemed "catastrophic" (unaffordable) when it exceeds a certain proportion of a household's resources. The idea is that if a household spends a large fraction of its available budget on a specific item, it will have to reduce its consumption of other goods and services. The affordability threshold is subjective.
2. The impoverishment method - this method considers the absolute quantity of available resources before and after payment for a commodity. If the household is initially above the poverty line but drops below it after paying for the commodity, it can be said to have been "impoverished" by the payment. This approach has been commonly used to study housing affordability and has also been applied to health care

The authors acknowledge that both methods in their existing form are data intensive, and can be hard to compare between countries. They set to demonstrate a less data intensive approach to measure affordability. The method for calculating medicine affordability that they propose requires a knowledge of four components: (i) the price of (treatment with) a given medicine (P) (ii) a country's total population (Pop); (iii) the aggregate income level of a country (Y); and (iv) the proportion of the total income earned across income groups (D) within a country. The last three components are first combined to draw an income distribution that plots the average daily income for each income group. Clearly, the use of aggregated data does require some simplifying assumptions.

The authors recognise there are limitations of their method, including validity of the aggregated income data, choice of the thresholds used to define impoverishment and catastrophic expenditure.

Source: http://www.who.int/bulletin/volumes/90/3/10-084087/en/