

Private Health Insurance in Australia: Consumer Trends, Problems and Innovative Solutions

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Outline

- 1 Introduction
- 2 What value does PHI present to consumers of different ages?
 - Compute prices of PHI policies
 - A fair schedule of ABPs
 - Summary
- 3 Risk Equalisation
- 4 Innovations Beyond Community Rating
 - Guaranteed Renewability
- 5 Innovations within Community-Rated Markets?
- 6 Discussion

- The extant regulatory environment and changes to it have important implications with respect to consumer value and product design
 - community rating, Lifetime Cover, the Rebate, Medicare Levy Surcharge
- What is the “value proposition” for consumers and potential consumers?
 - how do cross-subsidies and the regulatory carrots and sticks affect this value proposition for different consumer groups?

- The Risk Equalisation (previously “reinsurance”) scheme
 - what risk selection issues do this, and the other regulatory mechanisms above, imply for different funds?
- What are the implications for innovations
 - that create a favourable risk selection for funds?
 - that generate efficiency gains by funds who target specific consumer groups?

- What is the scope to improve the existing regulations so that individuals would not buy PHI *without a tax incentive* to do so?
 - how could the industry respond to the MLS threshold increases?
- Are there any *alternative* scheme designs that
 - could open up the opportunities for funds to innovate and attract members
 - but preserve some of the important attributes of community rated PHI?

- What is the scope for innovations with existing members, within the existing regulatory framework?
- These questions, combined, have become even more important given recent declines in investment income
 - implicitly, another premium inflation driver?

Connelly LB and Brown III HS (2008) “Lifetime Fairness? Taxes, Subsidies, Age-Based Penalties, and the Price of Health Insurance in Australia”, Australian Centre for Economic Research on Health (ACERH) Working Paper Series, Working Paper No.1, ACERH, Canberra, June 2008,
http://www.acerh.edu.au/publications/ACERH_WP1.pdf

- Also see: Connelly LB and Brown III HS (2006) “Lifetime Subsidies in Australian Private Health Insurance Markets with Community Rating”, *Geneva Papers on Risk and Insurance – Issues and Practice*, Vol.31, pp.705-19.

The Model

- Standard (EU) insurance theory: risky income distribution with mean k and a certain income k , a risk-averse individual prefers the certain income
- A risk-averse individual offered an actuarially fair premium will purchase the policy and experience a welfare gain thereby (Arrow 1963)

$$P_i = z_i H_i \quad (1)$$

- where P_i is the actuarially fair premium for the i th individual,
- z_i is the probability of the loss event (e.g., of hospitalisation) for the i th individual and
- H_i is the value of the loss (e.g., the cost of the hospital episode) to the i th individual if the event occurs.

The price of insurance

- The price of health insurance (p_i) is the price per dollar of expected benefit
- or, equivalently, the ratio of the expected loss to the premium:

$$p_i = P_i / z_i H_i \quad (2)$$

- Note that it follows from (1) that $P_i / z_i H_i = \$1.00 = p$
 - i.e. by definition, a premium is actuarially fair if the price per dollar of expected benefit is one.

Cross-subsidisation

- Unfair premiums are common for a variety of reasons
 - administrative costs, imperfect competition, asymmetric information (Rothschild and Stiglitz 1976); regulation-induced cross-subsidies (community rating)
- But there is also evidence of cross-subsidies in experience-rated PHI markets (Herring and Pauly 2006a)
 - and of observable but unused information in insurance markets (see, e.g. Finkelstein, McGarry and Sufi 2005)

The price of PHI in Australia

The price of insurance, as previously defined, (2), in the Australian setting is complicated by the Rebate

$$p_i = C_i^P / z_i H_i = [(1 + A \times 0.02) \times \overline{zH} - R_i] / z_i H_i \quad (3)$$

Computation of (2) and comparison to unity is the central method

- the price may be fair (=1.00), unfair but favourable (<1.00), or fair but unfavourable (>1.00)

Of course, some individuals still buy when prices are unfair and unfavourable *and* without government subsidies prices would need to be “unfair” to cover administrative costs (e.g., 1.10-1.15).

Real lifetime annual premia

- The LC scheme is designed to attract and maintain membership of younger people.
- We also compute a real, mean, annual premium for lifetime, by joining age.

Data

- Private Health Insurance Administration Council (PHIAC)

- ① number of members by gender and age
 - use the hospital table (only)
 - number of members by 5-year age group (to 95+)
- ② proportion of the Australian population with PHI
- ③ benefits paid
- ④ number of episodes

Since the insured event is hospitalisation, the mean probability of the insured event in the j th age group (\bar{z}_j) may be derived by dividing 3. by 1.

Similarly, the mean cost per insured event for the (insured) members of the j th age group (\bar{H}_j) may be derived by dividing 2. by 1.

Data

- Medibank Private Ltd
 - insurance policies and premiums
- We use only publicly-available data: we do not know what mix of policies was *actually* purchased, by whom.

Results

Table 1: Estimated mean prices of private health insurance in Australia, with and without the private health insurance rebate, by gender and age

Age	Persons		Males		Females	
	\bar{p}_A	$\bar{p}_A - R_A$	\bar{p}_A	$\bar{p}_A - R_A$	\bar{p}_A	$\bar{p}_A - R_A$
0-4	\$2.40	\$1.68	\$2.17	\$1.52	\$2.71	\$1.90
5-9	\$9.43	\$6.60	\$8.62	\$6.04	\$10.47	\$7.33
10-14	\$8.81	\$6.17	\$8.91	\$6.23	\$8.71	\$6.10
20-24	\$2.36	\$1.65	\$2.92	\$2.04	\$2.00	\$1.40
25-29	\$1.30	\$0.91	\$3.10	\$2.17	\$0.89	\$0.62
30-34	\$1.03	\$0.72	\$3.22	\$2.25	\$0.66	\$0.46

Results

Table 1 (cont'd): Estimated mean prices of private health insurance in Australia, with and without the private health insurance rebate, by gender and age

Age	Persons		Males		Females	
	\bar{p}_A	$\bar{p}_A - R_A$	\bar{p}_A	$\bar{p}_A - R_A$	\bar{p}_A	$\bar{p}_A - R_A$
40-44	\$1.57	\$1.10	\$2.22	\$1.55	\$1.24	\$0.87
45-49	\$1.36	\$0.96	\$1.63	\$1.14	\$1.18	\$0.83
50-54	\$1.04	\$0.73	\$1.11	\$0.78	\$0.98	\$0.68
55-59	\$0.75	\$0.53	\$0.74	\$0.52	\$0.77	\$0.54
60-64	\$0.52	\$0.36	\$0.49	\$0.34	\$0.56	\$0.39
65-69	\$0.36	\$0.24	\$0.33	\$0.22	\$0.40	\$0.26
90-94	\$0.17	\$0.10	\$0.16	\$0.09	\$0.17	\$0.10

Results

Table 2: Estimated mean prices of private health insurance in Australia by gender and joining age, with 2006 age-based penalties (ABPs)

Joining age	Mean (annual) lifetime prices		
	Persons	Males	Females
32	\$1.00	\$2.15	\$0.68
37	\$1.36	\$1.92	\$1.08
42	\$1.29	\$1.53	\$1.11
47	\$1.05	\$1.12	\$0.98
52	\$0.82	\$0.80	\$0.83
57	\$0.59	\$0.56	\$0.64
62	\$0.41	\$0.37	\$0.44

Results

Table 3: Simulated mean prices of private health insurance in Australia, with and without the private health insurance rebate, by couple age, for couples with dependent children

Age	Couples with...					
	One child		Two children		Three children	
	\bar{p}_A	$\bar{p}_A - R_A$	\bar{p}_A	$\bar{p}_A - R_A$	\bar{p}_A	$\bar{p}_A - R_A$
20-24	\$1.08	\$0.76	\$0.81	\$ 0.57	\$ 0.65	\$0.46
25-29	\$0.70	\$0.49	\$0.58	\$ 0.40	\$ 0.49	\$0.34
30-34	\$0.58	\$0.41	\$0.49	\$ 0.35	\$ 0.43	\$0.30
35-39	\$0.69	\$0.48	\$0.57	\$ 0.40	\$ 0.48	\$0.34

Results

Table 4: Fair lifetime premium multipliers and premia by joining age

Joining age	Multiplier	Basic cover	Comprehensive cover
0-4	0.54	\$317	\$787
5-9	0.55	\$323	\$800
10-14	0.72	\$420	\$1,042
15-19	1.04	\$611	\$1,515
20-24	1.26	\$737	\$1,828
25-29	1.45	\$848	\$2,103

Results

Table 4 (cont'd): Fair lifetime premium multipliers and premia by joining age

Joining age	Multiplier	Basic cover	Comprehensive cover
30-34	1.54	\$905	\$2,244
35-39	1.61	\$948	\$2,351
40-44	1.77	\$1,037	\$2,572
45-49	2.11	\$1,237	\$3,067
50-54	2.59	\$1,520	\$3,771
55-59	3.19	\$1,873	\$4,645

Results

Table 4 (cont'd): Fair lifetime premium multipliers and premia by joining age

Joining age	Multiplier	Basic cover	Comprehensive cover
60-64	3.86	\$2,268	\$5,625
65-69	4.52	\$2,650	\$6,574
70-74	5.04	\$2,959	\$7,339
75-79	5.38	\$3,155	\$7,826
80-84	5.56	\$3,260	\$8,087
85-89	5.66	\$3,321	\$8,239

Results

- A good linear approximation to our results is a 6% ABP/ABD

- LC scheme principles can be used to create premium loadings that discourage the adverse selection dynamic
 - the existing penalties would require adjustment to do this without imposing tax penalties.
- The MLS is the glue that holds the scheme together
 - the fears of an exodus from PHI are well-founded
 - the ABPs have also been weakened recently

Risk Equalisation

Paolucci F, Connelly LB, Butler JRG and Collins P (2008) Risk Equalisation in the Australian Private Health Insurance Market, *mimeo*.

Risk Equalisation

- “Risk Equalisation” was introduced on 1 April 2007, under the *Private Health Insurance Act 2007 (Cwlth)*
 - The “reinsurance” scheme that had been in place since the 1950s inheres:

Risk Equalisation

“The Health Benefits Reinsurance Trust Fund established under section 73BC of the National Health Act 1953 is continued in existence as the Private Health Insurance Risk Equalisation Trust Fund (the Risk Equalisation Trust Fund)” (Private Health Insurance Act 2007 (Cwlth) p.285).

Risk Equalisation

- The Act provides for a number of “Private Health Insurance Rules” to be made by the Minister, one of which is the Risk Equalisation Policy.
- Current Rules, which determine the flows into and out of the Risk Equalisation Trust Fund (RETF), contain elements that are designed to compensate for age-based and chronic-disease-related adverse selection between the health funds.
 - Age-Based Pool (ABP)
 - High Cost Claimants Pool (HCCP)

Risk Equalisation

- These pools form the basis for a zero-sum redistribution scheme between the funds.
 - administered by PHIAC
- By comparison with the previous reinsurance provisions, the ABP extends to policy holders aged 55+ years , whereas the previous reinsurance scheme extended only to policy holders aged 65+ years.
- The provisions of the HCCP are new (i.e., they did not exist under the previous reinsurance scheme).

Age-Based Pool Example (2 Funds)

A	B	C	D=BC	E	F=BE
Member Age	ABP Weight	Eligible Benefits, Fund 1	Fund 1 ABP	Eligible Benefits, Fund 2	Fund 2 ABP
0-54	0.00	\$13,818,135	-	\$10,242,164	-
55-59	0.15	\$1,765,650	\$264,848	\$1,308,721	\$196,308
60-64	0.425	\$2,516,052	\$1,069,322	\$1,864,927	\$792,594
65-69	0.60	\$4,025,683	\$2,415,410	\$2,983,884	\$1,790,330
70-74	0.70	\$6,843,661	\$4,790,563	\$5,072,603	\$3,550,822
75-79	0.76	\$12,044,844	\$9,154,081	\$8,927,781	\$6,785,114
80-84	0.78	\$21,439,823	\$16,723,062	\$15,891,449	\$12,395,330
85-89	0.82	\$39,020,477	\$31,996,791	\$28,922,438	\$23,716,399
Totals		\$101,474,325	\$66,414,077	\$75,213,967	\$49,226,898

High-Cost Claimants Pool Example (63 y.o. claimant)

A	B	C=0.425(B)	D=B-C	E	F	G=0.82(E-F)-H; G>0
Quarter	Gross Benefits Paid	Age-Based Pool (ABP) amount	Residual	Cumulative Residual (R)	Threshold (T)	HCCP Amount 0.82(R-T)-H*
1	Nil.	Nil.	Nil.	Nil.	Nil	Nil.
2	\$75,292	\$31,999	\$43,293	\$43,293	\$50,000	Nil.
3	\$85,021	\$36,134	\$48,887	\$92,180	\$50,000	\$34,588
4	\$60,000	\$25,500	\$34,500	\$126,680	\$50,000	\$28,290
Annual Totals		\$93,633				\$62,878

*H is the sum of HCCP payments over the three preceding quarters.

Example of Inter-Fund RE Transfers

A	B	C	$D=B_T+C_T$	E	$F=(B_T+C_T)/EG=EF_T$	G	$I=D-G$
	Age-Based Pool (ABP)	High- Cost Claimants Pool (HCCP)	Contributions to the Trust Fund (=ABP+HCCP)	Single Equiva- lent Units (SEUs) covered	Total Trust Fund Contribu- tions/ Total SEUs	Expected Benefits (for included claimants, at all-funds mean benefits)	RE Transfers
F1	\$66,414,077	Nil.	\$66,414,077	463,024		\$66,450,671	-\$36,594
F2	\$49,226,898	\$62,878	\$49,289,776	343,193		\$49,253,182	\$36,594
T	\$115,640,975	\$62,878	\$115,703,853	806,217	\$143.5145		

The Size of the RE Scheme

- “Churn” through the RE (reinsurance-cum-risk-adjustment) scheme was \$2.519b in 2006/07
 - new arrangements only apply from 1 April 2007
- *But*, this is the measure of contributions to, and withdrawals from, the RE pool.
- The net transfers are much smaller: \$197.776m was *redistributed* via the RE pool.

Largest Net Contributor and Receiver

- Without scaling for fund size...
- NIB made a net contribution of over \$46.7m
 - about 23% of net payments to the pool
- MBF made a net draw of over \$83.4m
 - 42.17% of net receipts from the pool

A Couple of Observations

- These two funds, which are at opposite ends of the RE distribution, have something in common: they were both recently demutualised.
- A more general question is, how does the RE scheme affect risk selection PHIs?
 - what are the profitable cream-skimming strategies?
 - are there any wrinkles in the RE-produced incentives?

Guaranteed Renewability

- Pauly, Hirth and Kunreuther (1995).
- Preserves open enrolment and premiums are set to attract high- and low-risk types.
- Individuals are guaranteed renewal of their policy “at the low-risk rate”.
- Insureds pay a premium to cover losses in the current time period *plus* a premium against the chance of becoming “high-risk” in the current time period.

Guaranteed Renewability

- This entitles the insured to buy PHI at the low-risk rate in the next period *irrespective of a change in risk* during the insured period.
- However, people who do not join until they are high-risks pay risk-rated premiums at a level commensurate with their risk.
- The scheme is analogous to the decision to take out a fixed rate home loan, where one is insured against an increase in interest rates.

Guaranteed Renewability

- To work, this type of scheme does require PHI regulation – but the regulatory requirements arguable are no greater than those we have in the PHI industry in Australia, at present.
- Advantage?
- Subverts adverse selection while preserving open enrolment.
- Governments can (for example) provide subsidies for individuals who “start out” as high-risks.

Guaranteed Renewability

See, e.g. Brown III HS and Connelly LB (2005) Market Failure in Long-Term Private Health Insurance Markets: A Proposed Solution, *Applied Economics Letters*, Vol.12(5): 281-84.

Incentive-Compatible Contracts for Insureds

- Reward individuals for “good behaviour” and preventive effort?
 - “free” (or even paid?) annual check-ups?
- Reward individuals for improvements in behaviour?
 - cash payments (premium discounts) for individuals who reduce risk factors (e.g., weight, blood pressure)?
- Re-introduce and “deregulate” payments for health-related inputs?
 - *if* we are interested in subsidising inputs (and maybe we *shouldn't* be) should memberships of registered/accredited gymnasiums be the only inputs that qualify?
 - restricting eligible providers confers market power (to an individual the exercise market is a local market) thereby reducing the surplus share for consumers.

Presentation slides

These slides are available from the ACERH website:
www.acerh.edu.au