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Competitive Health Markets and Risk Equalisation in Australia: Lessons Learnt from Other Countries

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# 1 **Competitive Health Markets and Risk Equalisation in Australia:** 2 **Lessons Learnt from Other Countries**

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8 N/A

## 9 **Compliance with Ethical Standards**

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11 Health Research for the research project published as a chapter of the ACHR report “Health  
12 Care in Australia: Prescriptions for improvements”. The present paper, although inspired by  
13 that project, represents an autonomous development that has not been specifically financed.  
14 Ayman Fouda, Gianluca Fiorentini and Francesco Paolucci declare they have no conflicts of  
15 interest.

16 **Abstract:** This paper aims at evaluating the risk equalisation arrangement in Australia’s  
17 private health insurance against practices in other countries with similar arrangements and  
18 proposing means of improving the system to advance economic efficiency and solidarity.  
19 Possible regulatory responses to insurance market failures are reviewed based on standard  
20 economic arguments. Various regulatory strategies used elsewhere are described, to identify  
21 essential system features against which the Australian system is compared. Results revealed  
22 that risk equalisation is preferred to alternative regulatory strategies such as premium rate  
23 restrictions, premium-compensation and claims-equalisation. Compared to some countries’  
24 practices, the calculated risk factors in Australia should be enhanced with further  
25 demographic, social and economic factors and indicators of chronic health issues. Other  
26 coveted features include prospective calculation and annual clearing of equalisation  
27 payments. System changes should be introduced in a stepwise manner. *Conclusions:*  
28 Australia currently operates with a crude mechanism for risk equalisation. The scheme  
29 incentivises insurers to select on risk rather than to focus on efficiency and equity-promoting  
30 actions. An incremental reform is proposed.

31

## 1 **Key Points for Decision Makers Summary**

- 2 • Risk equalisation is a well-established mechanism for ensuring sound competition in  
3 health insurance markets. Design features of the mechanism have been shown to  
4 critically affect its performance and the capacity to achieve social and health policy  
5 goals.
- 6 • In view of the most prominent international practice in other industrialised countries,  
7 Australia operates an inadequate, simplistic surrogate for which we suggest an  
8 incremental reform. Our approach is not only to show the desired system  
9 configuration, but also to enable its introduction without destabilising the existing  
10 system.
- 11 • The discussion sets out with general considerations about the adequacy of available  
12 regulatory strategies, and proceeds with detailed recommendations for the preferred  
13 solution. The sector stakeholders can follow this reasoning and confront the  
14 soundness of their own beliefs, both regarding the priorities for the health insurance  
15 market and at the level of the specific reform implementation.

## 16 ***1. Introduction***

17 Competitive health insurance constitutes an option for funding access to health care, either in  
18 addition to primary public national health insurance (e.g., Australia’s mixed funding of  
19 Medicare and private health insurance) or as the primary source of health care financing (for  
20 example in Germany, Switzerland and the Netherlands; also, contemplated in Australia under  
21 the Medicare Select proposal<sup>1</sup>). In Australia, the healthcare financing system is comprised of  
22 2 layers: public and private systems. The public system is the Medicare program which is a  
23 national mandatory scheme that is funded through taxes. Competitive health insurance  
24 constitutes the second layer of the healthcare financing system in Australia and it offers a  
25 choice of purchasing private health insurance which cover services that are partially or  
26 completely covered by Medicare, where members are treated as ‘Private Patients’ in any of  
27 the public or private hospitals. Australia is considered to be one of the highest rates in OECD  
28 in private health insurance (PHI) coverage as it covers around 45% of the population and  
29 contributes to a total of 7% of the total health expenditure.<sup>2</sup>

30 The espoused merits of this competitive model are that it facilitates choice, direct consumer  
31 engagement in paying for health care and efficiency through competition.<sup>3</sup> At the core of

1 effective sector regulation is risk equalisation (RE), a mechanism that aims at equalising the  
2 risk profiles of competing health insurers. In most countries RE is adopted when insurers are  
3 simultaneously forced to enrol (open enrolment) and to charge applicants the same premium  
4 for the same product without the possibility to differentiate the policy premiums according to  
5 their individual risk profile (community rating). This prevents insurers from using strategies  
6 to risk-select thus promoting price competition. RE provides a robust framework as it aims at  
7 achieving risk solidarity without abandoning the objective of economic efficiency (i.e.  
8 through competition). In this respect, RE offers an important regulatory tool to widen the  
9 insurance umbrella in competitive markets.

10 The aim of this paper is to explain the role of RE exploring international practices in  
11 competitive markets and the lessons for improvement of the RE regime in Australia. Other  
12 than offering welfare improvements of the present system, robust RE can be seen as a  
13 necessary condition for an adequate managed competition reform of Medicare, such as the  
14 National Health & Hospitals Reform Commission's proposed 'Medicare Select'.<sup>4</sup>

## 15 ***2. Instruments for solidarity***

### 16 **2.1. Principles of solidarity and equivalence**

17 Different regulatory strategies act as means for achieving risk solidarity and equitable  
18 financing of health care through cross-subsidisation of high-risk by low-risk individuals.  
19 Community rating combined with open enrolment is a popular instrument for pursuing  
20 solidarity objectives by imposing implicit cross-subsidies within a given health insurance  
21 product. However, this solution, on its own, is financially unsustainable in a competitive  
22 market. Since market competition leads to gradual decrease in the insurers' projected profits  
23 per enrollee, insurers cope with the expected financial unsustainability through reviewing the  
24 break-even point in each enrollee's contract; accordingly, insurers adjust the premium to  
25 reflect the individual risk (risk rating) or adjust the accepted and selected risks to the level of  
26 the premiums (risk selection).<sup>5</sup> In the long run, in voluntary systems this process makes  
27 health insurance less affordable for the higher risk and more affordable to the lower risk,  
28 pushing the outcome away from the socially desired market equilibrium and limits the  
29 coverage expansion from a health policy macro perspective. Restrictions on competition or  
30 choice, such as a single payer system, can prevent this from happening, but might as well  
31 reduce system efficiency. When a single payer system is regarded as politically not viable or  
32 not suitable, the most important policy question becomes that of framing a regulatory strategy

1 for the voluntary insurance markets to attain the best compromise between efficiency and  
2 solidarity.

### 3 **2.2. Regulatory strategies**

4 Competitive insurance markets in the absence of any regulation or subsidy tend to risk-rated  
5 premiums. Assuming perfect information and no transaction costs, high-risk individuals  
6 would pay higher premiums than low risk individuals (i.e. premium differentiation, which  
7 could also take the form of product differentiation) yielding allocative efficiency in the  
8 market, while solidarity/affordability objectives would be wholly disregarded. However,  
9 competitive insurance markets are pervaded by asymmetric information and transaction costs  
10 (e.g. to implement a risk-rating mechanism), leading to market failures.<sup>6 7</sup> Hence, regulatory  
11 tools are needed to address these allocative issues, and specifically to temper the premium  
12 range resulting from risk-rating and to reduce incentives for risk-selection. Moreover, if the  
13 competitive insurance markets are used to provide the basic coverage (not a supplementary  
14 one like in Australia) other interventions are required to solve the affordability problems for  
15 low-income citizens. In what follows, we discuss a variety of regulatory tools to address risk-  
16 rating and risk selection in markets with voluntary coverage showing that different tools are  
17 used to overcome specific problems often with little attention to the overall regulatory  
18 strategy and to the effects of the interactions between such tools.

#### 19 *Premium rate restriction*

20 Premium rate restrictions have numerous modes: community-rating per insurer or a  
21 prohibition on specific rating factors (i.e. setting a floor and ceiling on the premium range).<sup>8</sup>  
22 Most commonly used is community rating per insurer per product, often coupled with an  
23 open enrolment requirement that precludes the insurer from rejecting new or renewal  
24 contracts associated with high-risk individuals.<sup>9</sup> These implicit cross-subsidies cannot  
25 guarantee solidarity, however, as they allow insurers to infer projected profits and losses on  
26 classifiable subgroups of consumers, encouraging various forms of risk selection. In the US,  
27 premium rate restrictions were found to result in decreasing insurance coverage, substantial  
28 premium price increases, and phasing out of comprehensive packages.<sup>10</sup> Evidence from  
29 Germany shows that open enrolment and inadequate risk adjustment produce incentives for  
30 selection that are manifested by high mobility of young and healthy consumers.<sup>11</sup> In  
31 Switzerland, introducing open enrolment in 1996 marginally managed to sprout innovation in  
32 product design and strategies for cost containment among sickness funds.<sup>12 13</sup>

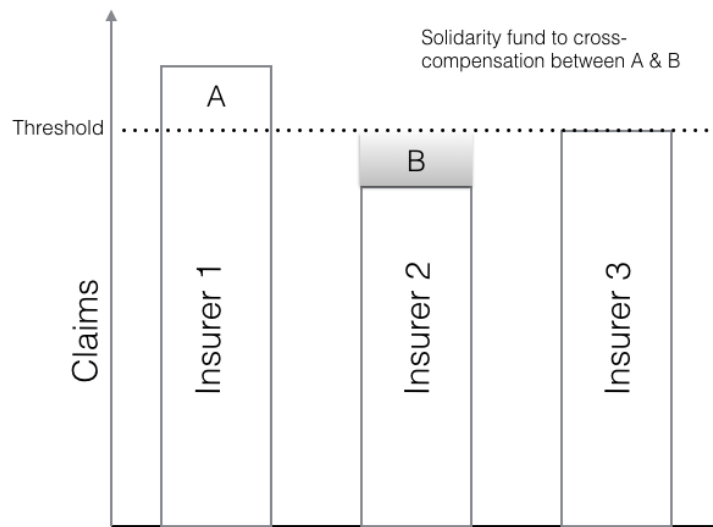
1 *Premium compensation schemes*

2 Premium compensation schemes are concerned with subsidizing insurance premiums, which  
3 can either be conveyed straightforwardly to consumers (e.g., as tax-deductibles for citizens  
4 with enough fiscal capacity to take advantage of them) or indirectly to insurers who then  
5 subtract the subsidy from nominal premiums (e.g., in Australia, premium related subsidies  
6 (i.e. the PHI Rebate) operate next, and in close connection with, other two regulatory tools:  
7 the Medicare Levy Surcharge (MLS) and the Lifetime Health Cover (LHC) loading. The  
8 combined effect of these strategies, considering that the MLS and the PHI rebate are stratified  
9 by income (as they are under current policies in Australia), is a tendency towards "locking in"  
10 consumers i.e. to reduce the price elasticity of demand).<sup>14,15</sup> While premium compensation  
11 schemes are used to pursue solidarity objectives, they diminish the consumers' sensitivity to  
12 premium prices. This marginalizes the competitive edge of the most efficient insurers and  
13 blunts incentives for price competition, possibly resulting in premium inflation. Premium-  
14 compensation can also intensify moral hazard by inducing consumers to purchase more  
15 comprehensive insurance coverage. Finally, as there is no direct compensation for contracting  
16 high-risk consumers, selection remains a strategic advantage for insurers.

17 *Claims-equalisation schemes*

18 In claims-equalisation schemes, a predetermined threshold is set and a cross compensation  
19 takes place in a reference period between insurers whose claims are above the threshold to  
20 insurers whose claims are below the threshold as illustrated in figure 1. This is typically done  
21 via a solidarity fund and for each individual insured, although other configurations exist.<sup>16</sup>  
22 The compensation may be either full, as in the Netherlands before 2006, or partial, as in  
23 Australia. Lowering the claims threshold may moderate selection practices and cream  
24 skimming in form of rejecting applicants with pre-existing medical conditions. However,  
25 because excess-loss-compensation reduces insurers' financial risks, solidarity gains come at  
26 the cost of a disincentive for efficiency, potentially leading to premium inflation.

**Figure 1. Claims Equalisation Mechanism**



1

2 *Risk equalisation schemes*

3 RE schemes exist in both compulsory and voluntary health insurance systems.<sup>17 18</sup> They  
4 revolve around the idea of cross-subsidies between high-risk and low-risk enrolees and are  
5 facilitated by a solidarity fund. High-risk enrolees receive subsidies, which are non-  
6 transferable and designated for health insurance acquisition with a specified benefits package,  
7 from the solidarity fund which claims its contributions from low-risk enrolees as well. The  
8 subsidy value for each pre-defined risk group is based on the average expenses of all insurers  
9 within that group and its accuracy depends on the risk adjustment factors. Therefore, the  
10 balance of risk solidarity between perfect and imperfect chiefly relies on matching and  
11 balancing risk factors between the solidarity funds and insurers. For example, imperfect risk  
12 solidarity can occur in two scenarios: first, if insurers possess a higher number of risk factors  
13 than the ones used for estimating the risk-adjusted subsidies, which will put insurers with a  
14 high share of high risks in a disadvantage; and second, if insurers can differentiate between  
15 the enrolees' risk spectrum (high or low-risk) within the "risk-adjusted premium subsidy's  
16 risk groups", thus, favor to reject high-risk applicants rather than further breakdown and  
17 differentiate their premiums, which in this case will put applicants in a disadvantage. Simple  
18 RE models that use risk factors such as gender and age leave space for risk selection  
19 strategies exploiting the risk determinants that remain unaccounted for. Consequently, more  
20 comprehensive and sophisticated RE models are needed to effectively restrain risk selection  
21 by rendering its costs above the potential profits.



1 In principle, accurate RE models – coupled with direct and significant interventions to solve  
2 the affordability problem for low-income citizens - have the potential for securing an  
3 acceptable level of solidarity without affecting effective price competition and financial  
4 sustainability of the system in mandatory health insurance markets. Therefore, given the  
5 political choice in favour of a multi-payer system, with a publicly financed mechanism with  
6 mandatory coverage, and a privately financed one with voluntary coverage, the use of the RE  
7 models can be recommended to build a more effective regulatory framework for the  
8 voluntary health insurance markets.<sup>19 20</sup>

### 9 ***3. Design of risk equalisation***

#### 10 **3.1. Risk factors**

11 Under open enrolment schemes, insurers' capacity of risk selection per applicant is restricted;  
12 nevertheless, selection based on different demographic factors such as age and gender;  
13 region; and income can be attained through directed branding and sales strategies and  
14 customizing the insurance package design. These demographic characteristics represent  
15 logical factors for adjustment. Other parameters, such as chronic conditions, may be factored  
16 in for an enhanced control of related benefit outlays. In principle, risk factors should be  
17 guided by the policy goals of mitigating risk selection, encouraging insurers to act as meso-  
18 level active purchasers<sup>21</sup>, and achieving equity. In consideration of the latter, some adjusters  
19 may be barred.<sup>22 23</sup>

#### 20 *Age*

21 Health care utilization predictably varies with age groups. Consequently, age is the basic risk  
22 factor for any risk equalisation scheme. In Australia, equalisation payments correspond to  
23 increasing percentages of entitled hospital benefits, in five-year age groups starting from age  
24 55, in state-based pools (Table 1). The benefits of entitled hospitals include inpatient  
25 treatment, hospital substitute treatment and pre-defined chronic disease managing plans.<sup>24</sup>  
26 Figure 2 demonstrates the average cost of health care utilization by age group and gender in  
27 Australia 2008-09.

**Table 1. Hospital benefits eligible for risk equalisation in Australia**

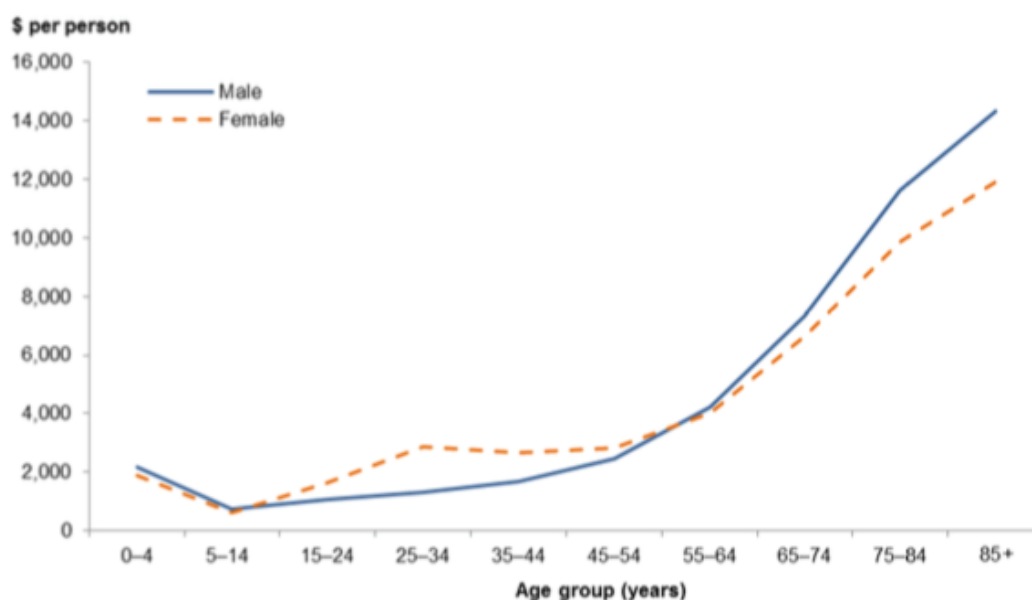
<b>Age band</b>	<b>% eligible</b>
0-54	0
55-59	15
60-64	42.5
65-69	60
70-74	70
75-79	76
80-84	78
85+	82

1 Source: Stoelwinder, J, and Paolucci F. "Improving the Efficiency and Solidarity of Australia's Risk Equalization Arrangements." Health  
 2 Care in Australia: Prescriptions for Improvement.: Australian Centre for Health Research, 2011. 97-10

3 *Sex*

4 Health care expenses and utilization differ between females and males. For example, because  
 5 of the associated maternal health at the maternity age, females tend to have higher expected  
 6 health care expenses; while elder males use more health care resources than females of equal  
 7 age (Figure 2). Gender is currently applied to risk equalisation formulas in Germany, the  
 8 Netherlands and Switzerland, but not in Australia, Ireland, Israel, United Kingdom (UK) and  
 9 South Africa.

**Figure 2. Average health care expenditure by age and gender, Australia 2008-09** <sup>25</sup>



10 Adapted from Australian Institute of Health and Welfare. 25 years of health expenditure in Australia 1989-90 to 2013-14. 2016. P. 16

11

1 *Chronic conditions*

2 Individuals suffering from chronic health conditions such as Hypertension, Asthma or  
3 Cancers are surely higher utilisers of health care resources than healthy individuals. The most  
4 sophisticated system for equalisation of risks related to chronic conditions operates in the  
5 Netherlands and uses two cost models:

- 6 • Model 1: Twenty Pharmacy-based Cost Groups (FKGs or PCGs), (table 2) which maps  
7 medications prescribed for at least 181 days in one year onto a chronic disease  
8 classification. Fund redistributions account for about 14% of the Dutch insurance pool.<sup>26</sup>  
9<sup>27</sup>
- 10 • Model 2: Thirteen Diagnosis-based Cost Groups (DKGs) based on admissions of over 2  
11 days, where one group is clustered by comparable resource utilisation and defined by  
12 medical condition and treatment specialisation. The prevalence of the high cost group is  
13 2.3% of the Dutch population and the redistribution accounts for 5% of the Dutch  
14 insurance pool.<sup>28 29</sup>

15 **Table 2. Pharmacy-based Cost Groups (PCGs) in the Netherlands**<sup>30</sup>

<b>PCG</b>	<b>Chronic disease descriptor</b>
1	Hypertension
2	Glaucoma
3	Depression
4	Gout
5	Thyroid conditions
6	Hyperlipidaemia
7	Diabetes
8	Respiratory illness/Asthma
9	Epilepsy
10	Acid peptic disease
11	Inflammatory bowel diseases
12	Cardiac disease, Atherosclerosis, Congestive heart failure
13	Tuberculosis
14	Rheumatological conditions
15	Parkinson's disease
16	Cystic fibrosis
17	Transplantations
18	Tumours
19	Acquired immune deficiency syndrome
20	Renal disease (including end-stage renal failure)

16 Adapted from Lamers, L M, and R C J A Vliet. "Health-based Risk Adjustment Improving the Pharmacy-based Cost Group Model to  
17 Reduce Gaming Possibilities." *Eur J Health Econ* 4.2 (2003): 107-14. Print.

1 Germany, South Africa and Switzerland use or plan to use chronic disease cost groups for the  
2 purposes of risk equalisation. Germany initiated the ‘morbi-RSA’ risk equalisation scheme in  
3 2009 as a prospective model based on the expected treatment expenses of 80 specific diseases  
4 with variable range of severity resulting in 106 morbidity groups. 50% of the risk  
5 equalisation pool is distributed by morbi-RSA and the rest is distributed by age, gender and  
6 disability benefits.<sup>31</sup> The Swiss risk formula contains a chronic disease proxy of hospital and  
7 nursing home episodes longer than 3 days in the previous 12 months. In South Africa, the  
8 shadow risk equalisation scheme was initiated in 2005 and it comprises of 26 chronic  
9 diseases instructed in the Prescribed Minimum Benefits Schedule for 19 age groups together  
10 with a classification for HIV/AIDS and modifiers for more than one chronic condition and  
11 maternity admission in the previous 12 months.<sup>32</sup> In the United States, risk equalisation or  
12 adjustment (as called in the US) was introduced as a permanent regulation along with 2  
13 temporary regulations: reinsurance and risk corridors as part of the Affordable Care Act  
14 (ACA) in 2014. One of ACA’s main objectives is to extend the coverage umbrella, especially  
15 to applicants with chronic conditions and control the practice of risk selection by insurers. In  
16 ACA, the risk equalisation payment occurs internally between insurers, not through Federal  
17 or state governments.<sup>33</sup> The ACA cost groups for adjusting clinical conditions in the new  
18 Department of Health and Human Services-Hierarchical Condition Category (HHS-HCC) risk  
19 equalisation model stems from a special US variant of the International Classification of  
20 Diseases called ICD-10-CM, where a clinical classification is applied to systematise the large  
21 number of ICD to simpler and more articulate diagnostic categories.<sup>34</sup>

## 22 *Socio-economic status and area of residence*

23 The German and Dutch risk equalisation schemes incorporate more sophisticated risk factors  
24 to their formulas which are: socio-economic status and area of residence in their systems in  
25 their quest to counter the insurers’ risk factors to eliminate possible risk-selection and to  
26 attain fine-tuned equitable payment approaches, although the inclusion of these factors can be  
27 challenging from the cost perspective due to computational challenges.

28 In the Netherlands, socio-economic status is factored in with a sophisticated set of variables  
29 including postal code (to reflect the level of urbanisation, ratio of single individuals, uniform  
30 death rates and closeness to health care providers), the source of income (income support,  
31 disability benefits or other public benefits), and the lowest three deciles of average income  
32 per household member. In Germany, the risk equalisation scheme includes six bands of  
33 disability benefits. In the United States, the risk adjustment methodology incorporates an

1 adjuster for the geographic cost factor where different prices for services depend on the  
2 geographic location on both the federal and state levels.<sup>35</sup> In UK, the insurance scheme is a  
3 national tax-based mechanism where the responsibility for commissioning healthcare services  
4 is shifted at the local level to Clinical Commissioning Groups (CCGs). In such a context, the  
5 approach to risk equalisation is deployed calculating weighted capitation formula, even if  
6 CCGs have a territorial basis with no possibility to select risks. Recently, even this formula  
7 has been modified introducing factors related to the historical costs of treatment for  
8 individuals in order to strengthen the budget constrain of the CCGs providing them with  
9 proper incentives to keep costs under control through a more efficient organization of  
10 primary care and a harder bargaining stance when negotiating with healthcare providers. This  
11 innovation shows that even in health systems where funds are not allocated to private insurers  
12 in a competitive setting with the problem of keeping under control risk selection strategies,  
13 still sophisticated RE mechanisms are regarded as useful tools to contain the moral hazard  
14 problem due to the misalignment between central funding authorities and local  
15 commissioners. More specifically, the weighted capitation formula considers the unavoidable  
16 costs related to the area of residence which are represented in the formula under two main  
17 components: Market forces factors, which represents the inescapable disparities in input costs  
18 (disparities in pricing due to differences in medical and dental charges; land prices; building  
19 prices) between each CCG area due to the different geographical location; and the  
20 unavoidable costs of remoteness, which is a new adjustment that has been introduced in the  
21 2016-17 formula with the purpose of adjusting for the geographical discrepancies resulting  
22 from the higher costs of hospitals that compensate for the low activity level and consequently  
23 a lower income due to remoteness.<sup>36 37</sup>

24

### 25 **3.2. Prospective or retrospective**

26 Payments for risk equalisation schemes can be calculated either prospectively, before any  
27 insured events take place using only past information, or retrospectively, after the relevant  
28 insured events have occurred.

29 The retrospective calculations shield health plans in competitive markets from adverse  
30 selection by high-cost patients whose conditions are diagnosed within the equalisation period.  
31 On the other hand, prospective models enable accurate setting of premium contributions and  
32 expected risk-equalization revenues at the beginning of each period. This predictability is

1 compelling for both insurers and sponsors. Particularly in the voluntary setting, strategic  
2 determination of premiums is important because consumers use prices not only as signals in  
3 their choice of insurers, but also in deciding whether or not to insure in the first place.  
4 Furthermore, prospective schemes shed more light on information on chronic and persistent  
5 conditions, while retrospective schemes tend to emphasise signals of current acute problems.  
6 Paying prospectively will create corrective incentives for increased prevention and constrain  
7 over-diagnosis of clinical conditions. This manifestation of moral hazard also hinges on the  
8 market share of the biggest insurance provider, as the market share is inversely proportional  
9 to efficiency pressures.<sup>38 39</sup>

10 In practice, both the incentive and fairness attributes of the retrospective framework are not  
11 essentially superior. Chapman argued in favour of retrospective models based on group-level  
12 predictions.<sup>40</sup> Dunn et al. compared the predictive precision of prospective and retrospective  
13 schemes and unexpectedly revealed minor differences in predictive power for groups of  
14 enrollees in large samples.<sup>41</sup> Ash and Bryne-Logan likewise found similar performance of the  
15 two schemes when non-random groups were formed using only prior-year information.<sup>42</sup>  
16 While this discussion is not unequivocal, in consideration of the economic efficiency the  
17 arguments are weighted in favour of the prospective scheme.

18 In the United States, where transition took place after the implementation of ACA in 2014, a  
19 special case of concurrent payment was deployed instead of prospective payment in the 1<sup>st</sup>  
20 year of implementation as the prospective model was infeasible due to the lack of its core  
21 requirement: information regarding previous years.<sup>43</sup>

### 22 **3.3. Frequency**

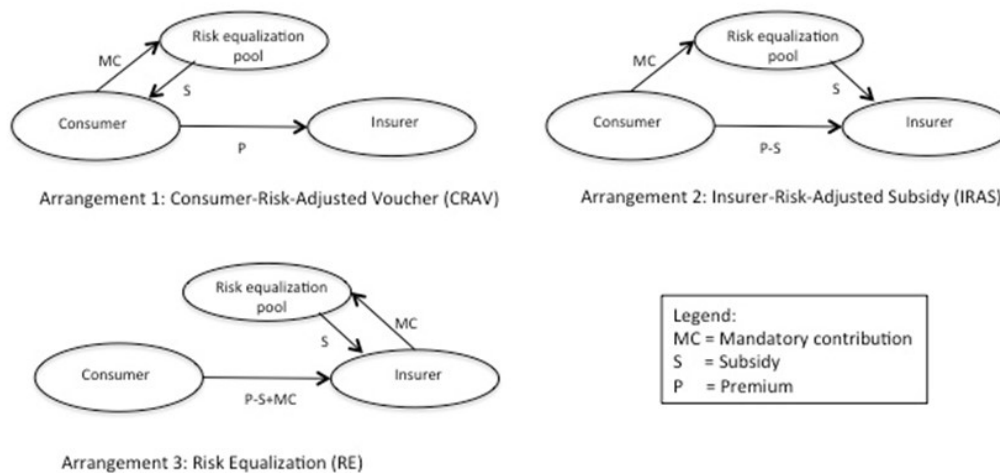
23 The transfer calculation takes place on yearly basis in many countries and on quarterly basis  
24 in the Australian case. More significant than the legally prescribed frequency and time of  
25 transfer, and their corresponding transaction costs, are disruptive delays in the actual transfer  
26 occurrence -- up to 3 years in the Netherlands<sup>44</sup>. The delays may affect all health insurance  
27 market participants and have negative consequences for efficiency and performance. This is  
28 because the ambiguity around the transfers scheduling and volume confounds premiums  
29 setting, package design, contracting strategies, and compensation agendas.

### 30 **3.4. Flow of funds**

31 There are several ways of organising the solidarity payment flows (Figure 3): Consumer-  
32 Risk-Adjusted Voucher (CRAV), Insurer-Risk-Adjusted Subsidy (IRAS), and Risk

1 Equalisation (RE). Under CRAV, equalisation takes place among consumers away from the  
 2 insurers where low-risk enrolees contribute with a compulsory contribution to the solidarity  
 3 fund, from which high-risk enrolees obtain a risk-adjusted premium subsidy. Payments are  
 4 provided independently of the insurance market, for example through tax authorities. IRAS  
 5 arrangement is operated in Israel and the Netherlands. Here, insurers receive the equalisation  
 6 fund subsidies, which are subtracted from premiums paid by consumers. In Germany, Ireland  
 7 and Switzerland, consumers pay the premium to insurers, while the insurers and the  
 8 equalisation fund clear the net difference of all solidarity contributions and subsidies.  
 9 Importantly, the organisation of the flow of funds has no consequence for how the cross-  
 10 subsidies are calculated and thus has no impact on economic incentives.<sup>45 46 47</sup>

**Figure 3. Alternative flows of cross-subsidies**



11 Adapted from Armstrong J, McLeod H, Paolucci F. 2011. Risk Adjustment-Lessons Learned: Experience in VHI Markets & Ven,  
 12 W.P.M.M. van de, F.T. Schut (2008), Universal mandatory health insurance in the Netherlands: a model for the United States?, Health  
 13 Affairs 27(3): 771-781.

#### 14 **4. Implications for Australia**

15 Regulation of private health insurance in Australia has been reformed over the past 60 years  
 16 from regulation using Special Accounts to the introduction of the reinsurance schemes and  
 17 currently the risk equalisation scheme which replaced the reinsurance scheme in 1997.<sup>48</sup>

18 In Australia, the private health insurance market is currently supervised by the Australian  
 19 Prudential Regulation Authority (APRA) since July 2015, as the supervision of private health  
 20 insurers has been transferred from the Private Health Insurance Administration Council  
 21 (PHIAC) to APRA. The statutory goal of regulating the private health insurance market in  
 22 Australia aims at providing all Australians with accessible community-rated adjusted

1 (currently to age) private health insurance regardless of age, sex or health status.<sup>49</sup> APRA  
2 administers the Risk Equalisation Trust Fund of 39 registered private health insurance funds.

3 The underlying risk equalisation mechanism is crude and inadequate. Its sole risk factor, age  
4 grouped into eight bands, is insufficient to attain fair treatment of competing insurers with  
5 diverse risk pools. Consequently, funds are disadvantaged if they have other demographic  
6 factors imbalanced such as: female vs. male ratio; females of maternity age vs. other female  
7 ratio; or a pool with higher share of risk than other funds in the particular state. Moreover,  
8 product-based community-rating is a threat to the market stability, manifested by premium  
9 discrimination via product differentiation, one outcome being the significant premium  
10 discrimination in hospital cover premiums where the ratio of the high-risk to the low-risk  
11 policies nears 4:1.<sup>50</sup> In addition, the in-effect risk equalisation mechanism is a retrospective  
12 claims-equalisation scheme where the costs between insurers that result from differences in  
13 actual claims are equalised. This reduces price-competition and decreases efficiency as  
14 insurers pool their financial risks and also provides insurers with incentives for risk selection.  
15 <sup>51</sup> Novak et al. also argue that the existing regulation “effectively weakens incentives for  
16 insurers to minimize their costs, undertake efficient investments or act in an innovative or  
17 competitive manner”.<sup>52</sup>

18 Instead, a more sophisticated RE mechanism would allow for a superior balance between  
19 efficiency and solidarity in the Australian voluntary health insurance market. In particular,  
20 considering the 2003 ‘Risk-Based Capitation’ proposal,<sup>53</sup> we recommend a prospective RE  
21 scheme with eight to ten age-gender groups. Additional risk-adjusters can be applied to fine-  
22 tune the formula towards socially desired degrees of solidarity and guaranteed benefits.  
23 Experiences in other countries (although some of them refer to RE applied to mandatory  
24 insurance markets) show that health proxies and socio-economic variables prove effective in  
25 a more refined determination of risk-adjusted subsidies.<sup>54 55</sup> Additionally, linking the RE  
26 framework to a defined benefit package would counteract risk selection based on product  
27 exclusions.

28 Changes to the RE mechanism can have a considerable impact on individual funds’ financial  
29 performance. To avoid disruption, time should be allowed for product premiums to  
30 accommodate the changes in factors that determine insurer pools’ risk assessment and  
31 compensation. This requires a gradual implementation strategy, which in Australia could  
32 follow four stages:



- 1 1. Comprehensively reviewing the existing private health insurance market regulatory  
2 framework and setting explicit social goals in the process of stakeholder consultations.
- 3 2. Introducing a prospective age-gender adjusted subsidy replacing the current premium  
4 rebate and setting an explicit basic benefit package with community-rating and open  
5 enrolment. The prospective risk equalisation would be put in effect only to the acceptable  
6 costs defined within the basic package, leaving the space for insurers to offer  
7 supplementary coverage without limitations on premium rating and no further subsidies.  
8 Any insufficiency in the achieved level of risk solidarity could be corrected for by a  
9 provisional adoption of pure claim compensation as a complementary risk-sharing  
10 mechanism. Efficiency disincentives of this solution could be moderated by gradual  
11 improvements in the retrospective equalisation formula. A market (voluntary reinsurance)  
12 or government (regulatory) mechanism would be established for the indemnification of  
13 excess risk.
- 14 3. Implementing the prospective risk equalisation formula with socio-economic and  
15 demographic variables; community rating based on allowing risk groups with the purpose  
16 of impeding any forms of risk selection and fostering price competition; retaining the  
17 claims equalisation model with concurrently stimulating the quality of risk equalisation  
18 by progressive increases in annual loss thresholds that determine the extent of  
19 compensation; re-evaluating the necessity and proportionality of external government  
20 subsidies.
- 21 4. Further improving of the prospective risk equalisation scheme with the incremental  
22 addition of health status proxies, starting from a refined version of DRGs and  
23 transitioning to a new Australianised edition of Dutch DCGs, PCGs and disability-related  
24 adjusters; evaluating the effectiveness and efficiency of risk groups and economic  
25 evaluation of risk rating in both basic and supplementary packages; removing or further  
26 increasing loss thresholds.

## 27 ***5. Concluding remarks***

28 The policy relevance of risk equalisation has increased during the past twenty years as more  
29 countries introduce it as a regulatory tool to enhance the performances of their competitive  
30 health insurance markets (especially those with mandatory insurance).<sup>56</sup> The objective stated  
31 by the policy makers is to establish a cost-conscious, quality-oriented, innovative and  
32 responsive system for health care financing, reducing the problems in providing affordable

1 coverage for high-risk individuals. These complex goals are impossible to achieve in a  
2 competitive setting without a well-crafted risk adjustment mechanism.

3 Common regulations on package design and premium modelling, notably community-rating,  
4 set implicit cross-subsidies from low-risk to high-risk enrollees, which create an incentive to  
5 attract the former predictably profitable enrollees while avoiding the latter. The resulting  
6 selection and risk segmentation can undesirably affect access, quality and economic  
7 efficiency of the system.<sup>57</sup> Instead, risk equalisation aims at providing explicit subsidies to  
8 high-risk enrollees with the potential to remove most market distortions. Based on the most  
9 prominent international practices, such a mechanism can reduce the costs of balancing  
10 efficiency and solidarity even when applied to a market with voluntary health insurance.  
11 Moreover, it can also provide an important reference to neighbouring countries to observe  
12 and take notes for further implementation and fine-tuning. Our paper illustrates how this can  
13 be achieved in Australia.

#### 14 **Author Contribution**

15 Francesco Paolucci wrote the first draft of sections 2.2, 3.1 on Australia and the Netherlands,  
16 3.4, and 4 building on and further developing the chapter of the ACHR report “Health Care in  
17 Australia: Prescriptions for improvements”; Ayman Fouda wrote the first draft of sections  
18 2.1, 3.2 and 3.3; Gianluca Fiorentini wrote the first draft of section 3.1 on the UK. Ayman  
19 Fouda and Gianluca Fiorentini reviewed subsequent drafts of the paper also in light of the  
20 comments of the referees for this journal.

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