23
October 2010

International Association for the
Study of Insurance Economics

Health and Ageing

Research Programme on Health and Productive Ageing

Geneva Association Information Newsletter

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The Geneva Association • General Secretariat • 53 route de Malagnou • CH - 1208 Geneva
Tel. +41-22-707 66 00 • Fax +41-22-736 75 36 • info@genevaassociation.org • www.genevaassociation.org

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The Geneva Association Information Newsletter – Health and Ageing, N° 23, October 2010

This Newsletter for Health and Ageing is linked to the Research Programme on Health and Ageing and is published biannually in April and October.
For information and suggestions, please write to the Editor at the Geneva office.

Printed copies: 1,200. Unrestricted circulation. Free of charge.
Editor: Dr Christophe Courbage, The Geneva Association
Production: Valéria Kozakova

Download the electronic version from: *www.genevaassociation.org*

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ISSN:1605-8283

I. GUEST EDITORIAL

Health Care Reform Arrives in the United States

By Scott E. Harrington[*]

The United States enacted health care reform legislation, the Patient Protection and Affordable Care Act (PPACA), in March 2010 after a bitterly contested battle over the prior year. President Barack Obama signed the main legislation on 23 March and amendments on 30 March, completing the most significant controversial social legislation in the United States since the enactment of Medicare and Medicaid in 1965.[1] In contrast to those programmes, which received bipartisan support from both Democrats and Republicans, no Republican member of the U.S. House of Representative and U.S. Senate voted for the PPACA.

Coverage Expansion

The PPACA will expand health insurance coverage primarily by: (1) requiring individuals to obtain qualified health insurance; (2) subsidizing the cost of coverage for low-to-moderate income persons; (3) requiring other than small employers to offer health coverage to employees; and, (4) significantly expanding eligibility for publicly-funded Medicaid programmes that provide coverage to low-income persons. Beginning in 2014, most legal residents will be required to have health insurance, unless the cost of minimum qualified coverage exceeds 8 per cent of their income. The penalty for non-compliance with the "individual mandate" to obtain coverage will be the greater of US$95 or 1 per cent of taxable income in 2014, increasing to the greater US$695 or 2.5 per cent of taxable income in 2016, and indexed to inflation in later years. Publicly-funded premium credits (subsidies) will be provided to individuals/families with income between 133-400 per cent of the Federal Poverty Level (FPL). The credits limit premium contributions to specified percentages of income (e.g., 3-4 per cent for incomes between 133 and 150 per cent of FPL, increasing to 9.5 per cent for incomes between 350 and 400 per cent of FPL). The law also reduces cost-sharing for persons with incomes up to 400 per cent of FPL. Eligibility for taxpayer-funded Medicaid programmes will expand to people with incomes up to 133 per cent of the FPL, including non-disabled, non-elderly adults without dependent children.

Businesses with 50 or more employees will be required to offer health coverage to employees or pay penalties, as will those that offer coverage to employees if any of their employees obtain subsidized coverage outside of employment. Employers with up to 25 employees and annual wages averaging less than US$50,000 will be eligible for tax credits for offering coverage.

The U.S. Congressional Budget Office (CBO) projects that the PPACA will result in 32 million fewer people being uninsured in 2019 (CBO, 2010). It estimates that half of the newly insured will receive coverage through publicly-funded Medicaid programmes and that 3 million fewer people will be covered by employer-sponsored health insurance in 2019 than under pre-reform law.

Insurance Market Reforms

The PPACA requires the establishment of State-based health insurance exchanges for the individual and small group markets. States are permitted to enter into agreements to establish multi-State exchanges. Premium subsidies will only be available for coverage purchased through an exchange. Health insurers, whether participating in the exchanges or not, will be restricted to offering four coverage tiers, along with a catastrophic plan for young adults. They will have to accept all applicants regardless of health status, without excluding coverage for preexisting conditions. Premium rates will be allowed to vary only by coverage tier, number of dependents, geographic region, age (within 3-1 ratio), and tobacco use (1.5-1 ratio). The restrictions on underwriting are much stronger than those that

[*] Alan B. Miller Professor of Health Care Management and Insurance and Risk Management, Wharton School, University of Pennsylvania, harring@wharton.upenn.edu. This overview draws from my article, "U.S. Health Care Reform: The Patient Protection and Affordable Care Act", *Journal of Risk and Insurance* 77 (September 2010): 703-708.

[1] See Kaiser Family Foundation (2010) for a detailed summary.

currently exist in most U.S. States. The extent to which the restrictions, in combination with relatively low financial penalties for failure to buy coverage, will lead to significant adverse selection has been extensively debated (see, for example, my March 2010 article).

Despite advocacy by many Democrat legislators and President Obama, securing passage of the bill required dropping provisions that would establish a government health insurer to compete with private insurers (the so-called "public option"). The PPACA does include funds to subsidize the creation of non-profit, co-operative health insurers at the State level.

The PPACA establishes a form of federal government price controls on health insurance. Beginning in 2011, health insurers must spend an amount on allowable medical costs equal to a minimum of 85 per cent of premiums (net of certain taxes as yet to be determined) for large group coverage and 80 per cent of premiums for small group coverage. Insurers will be required to pay rebates to policy-holders if necessary to achieve those minimums. The definition of eligible medical costs for calculation of the ratio and the possibility of significant market disruptions is being debated as regulators develop specific rules.

The PPACA does not provide the federal government with specific authority to impose prior regulatory approval of rates, or mandate prior approval of rates by the States, but it requires States to have a process for reviewing health insurance rate increases (all States currently have some process) and for requiring health insurers to justify rate increases. Health insurers with "unreasonable" increases may be excluded from the exchanges. A newly created Office of Consumer Information and Oversight will assist the States in reviewing rates and, in conjunction with State regulators, develop rules for implementing the law's rating provisions.

The PPACA includes a number of insurance market changes to become effective during 2010 or 2011, including: (1) creation of high risk pools to provide subsidized coverage to individuals with pre-existing medical conditions who have been uninsured for at least six months until the law's main provisions take effect; (2) prohibition of preexisting condition exclusions for children; (3) mandating that health plans include coverage of enrollees' adult children up to age 26; (4) limitations on the inclusion of annual and lifetime benefit limits prior to their complete elimination in 2014; and, (5) prohibition of policy rescissions absent of fraud. With the exception of most regulations dealing with these five areas, existing health plans are grandfathered with respect to the law's new benefit standards.[2]

Projected Costs and Financing

The CBO projects that the law will reduce U.S. government budget deficits by US$143 billion over 10 years.[3] The CBO projects a US$820 billion increase in federal spending during that period for the direct cost of expanding coverage, roughly divided between the cost of premium subsidies and Medicaid expansion. The CBO projects US$438 billion in revenue increases from new taxes and fees. The law imposes a 40 per cent excise tax on certain high-cost insured and self-insured health plans to begin in 2018. Other new taxes include for high-income persons a 3.8 per cent Medicare tax on investment income and an additional 0.9 per cent Medicare hospital insurance programme tax on earned income (projected to generate US$210 billion during 2012-2019, [Joint Committee on Taxation, 2010]).

The CBO projects US$455 billion in 10-year federal spending reductions, primarily for the U.S. government Medicare programme, which provides health insurance coverage to most adults aged 65 and older, as well as many disabled, younger persons. The projected Medicare spending reductions include US$196 billion in cuts in annual updates to hospital reimbursement rates and US$136 billion in reimbursement cuts for the Medicare Advantage programme, in which private insurers provide coverage to about ¼ of Medicare enrollees (CBO, 2010). The law establishes an independent Payment Advisory Commission to recommend additional cuts in Medicare spending if per capita growth in Medicare spending exceeds target levels.

[2] Detailed regulations will govern the scope of changes that can be made in existing plans without losing their grandfathered status.

[3] The CBO later estimated that additional federal budget outlays of over US$100 billion over 10 years will be needed to administer certain aspects of the law. The US$143 billion includes US$70 billion in projected deficit reduction from the creation of a voluntary, employment-related, long-term care insurance programme, the Community Living Assistance and Support Services (CLASS) programme, which is projected to generate substantial revenues and minimal costs over 10 years, with offsetting costs in excess of revenues in later years.

Future Directions

Assuming that its key provisions take effect, the Patient Protection and Affordable Care Act will significantly expand health insurance coverage in the United States through its individual mandate, premium subsidies, and expanded eligibility for Medicaid. The law will transform private health insurance markets by the creation of State-level health insurance exchanges and federal government prescription of individual and small group health insurance benefits, coverage, and allowable underwriting/rating criteria.

The health care reform legislation remains highly controversial. Opposition to the law is expected to play a significant role in the November 2010 congressional elections, and perhaps the 2012 congressional and presidential elections as well. Many Republican legislators and candidates advocate repeal of the law and/or legislative action to delay and limit its implementation. Attorneys general in approximately 20 States have joined a lawsuit challenging the constitutionality of the individual mandate. Nearly 40 State legislatures have introduced some form of legislation to challenge or interfere with the law's implementation.

Substantial skepticism exists over whether the health care reform law will significantly slow the growth in U.S. health care costs (i.e., "bend the cost curve") or reduce significantly U.S. government health care spending deficits. The cost of U.S. health care and insurance will remain problematic and subject to acrimonious debate for the foreseeable future.

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II. INVITED ARTICLE I

Biometrical Trends and their Effects on Long-Term Care Insurance[*]

By Tim Eppert[+]

Introduction

The phenomenon of ageing societies is widespread. Territories as diverse as the U.S., Japan, Western Europe or China are all experiencing significant societal changes. A rapidly increasing proportion of elderly people not only makes for more pensioners, but also for additional numbers of people in need of care in their old age.

Having said this, the consequences of the ageing of an individual are still controversial. Does a higher life expectancy (LE) imply that more years will be spent in good health, as the compression of morbidity

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[+] Actuary (DAV), Product Specialist LTC, Gen Re. Email: *tim.eppert@genre.com*.

theory[4] states, or does it lead merely to an extension of life with morbidity?[5] These questions led to the definition of healthy life expectancy (HLE), which measures the years a person spends in good health. HLE plus the years people can expect to live with health-related limitations in daily activities make up the total LE.

Unfortunately the results for HLE do not seem to be very reliable so far. Whereas the LE for people aged 65 in the decade to 2007 increased in almost all countries in the European Union, changes in the HLE have varied significantly from country to country. Some countries, such as the U.K. and the Netherlands, report slight improvements while others report more significant improvements, while others again, such as Germany and Italy, experience deteriorations. Table 1 shows the trends in some selected countries.[6] Apart from real differences in functional status, the results may be biased as they are based on self-reported health and the underlying survey changed over time in some countries.

Table 1: Healthy Life Expectancy in Europe

	Life Expectancy (65)		Healthy LE (65)		Proportion of HLE	
Females	1997	2007	1997	2007	1997	2007
Denmark	18,0	19,2	8,9	14,3	49%	75%
Italy	20,2	21,8	12,7	7,3	63%	33%
Germany	19,1	20,7	9,4	7,6	49%	37%
UK	18,5	20,2	9,5	11,7	51%	58%
	Life Expectancy (65)		Healthy LE (65)		Proportion of HLE	
Males	1997	2007	1997	2007	1997	2007
Denmark	14,6	16,5	8,6	13,1	59%	79%
Italy	16,2	18,0	10,9	7,9	67%	44%
Germany	15,2	17,4	9,8	7,7	64%	44%
UK	15,1	17,6	8,7	10,4	58%	59%

This article cannot answer the question if we will grow old in good or bad health, but it reveals different possible drivers of an increasing life expectancy and analyses their impact on Long-Term Care (LTC) business, using a simplified multi-state model. The effects on prevalence rates are also analysed, as they are often used to get an indication of the future development of LTC costs. Taking account of the target market for LTC, the analysis is limited to lives aged 50 at policy issue. The effects are shown for a stand-alone product with whole of life cover and an unlimited benefit period without a deferment period.

Model

The simplified actuarial model for LTC insurance (Figure 1) has three different states: *active* in the sense of “not in need of care”, *disabled* defined as “in need of care” and *dead*. The transition probabilities between these states are;

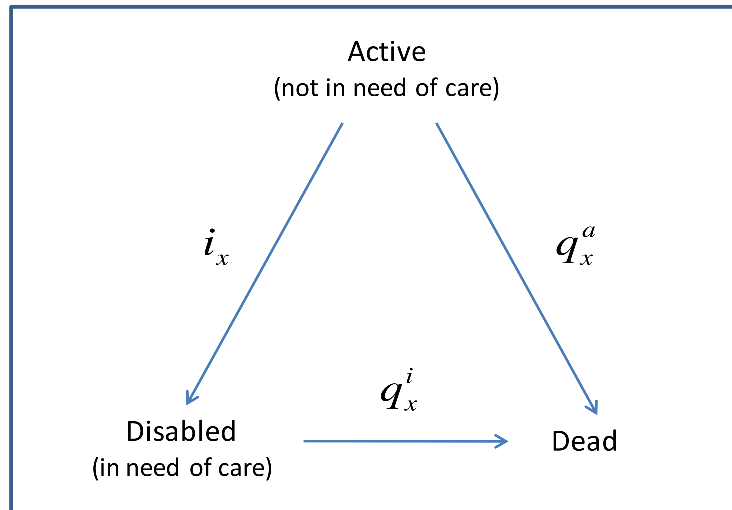
- the incidence rates i_x: the probability of becoming disabled, defined as the permanent inability to perform at least two out of six activities of daily living without the physical support of another person;[7]
- the mortality rates for active lives q_x^a; and,
- the mortality rates for disabled lives q_x^i.

It is assumed that disabled lives cannot recover to the “active” status, as only permanent disability will lead to benefits. For the transition rates the LTC table of the German Association of Actuaries (DAV)

[4] Fries J.F. (1980) “Aging, natural death, and the compression of morbidity”, N Engl J Med; 303:130–135.
[5] Gruenberg E.M. (1977) “The Failures of Success”, Milbank Mem Fund Q Health Soc, Winter; 55(1):3-24.
[6] Eurostat, own calculations, Healthy LE is defined as “The mean number of years still to be lived by a person at age 65 in the absence of limitations in functioning/disability”.
[7] Washing, Dressing, Eating, Continence, Transferring and Mobility.

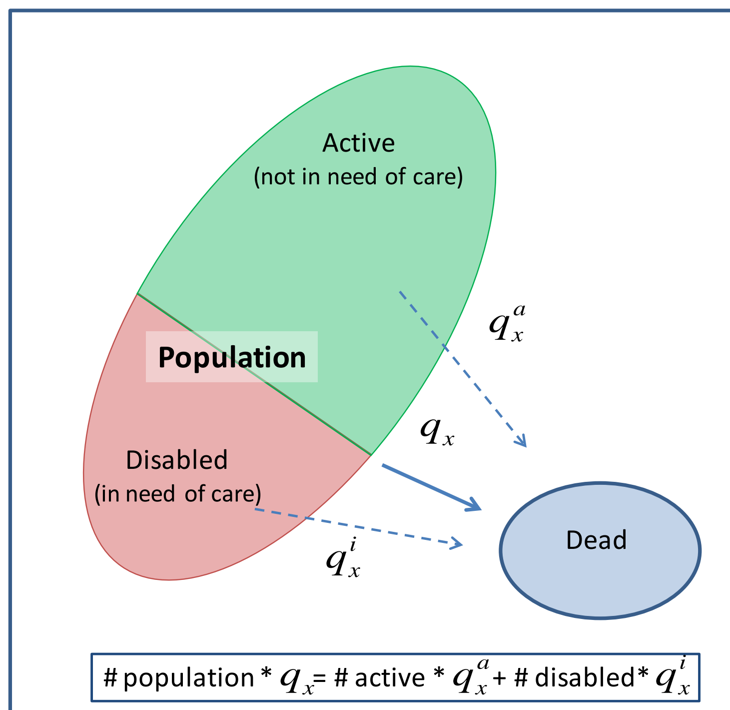
was used (DAV 2008 P).[8] Since this article models an insured population of 50-year olds at policy issue, it is assumed that the prevalence rate of disabled lives aged 50 is zero.[9]

Figure 1: Simplified Actuarial Model for LTC



The aggregate mortality rate q_x is a combination of the mortality rates for active and disabled lives, each weighted with the age-dependent proportions of active and disabled lives respectively (Figure 2). The active lives mortality is lower than the disabled lives mortality.

Figure 2: Interaction of Different Mortalities



An increasing life expectancy (which means lower population mortality rates) can be caused by a decreasing active lives' mortality, a decreasing disabled lives' mortality and/or by a changed proportion of disabled lives within the population—the prevalence rate of disabled lives. This prevalence rate is mainly driven by the incidence rates, but also by the mortality of active and disabled lives respectively.

8 The DAV 2008 P uses a trend for active lives mortality, which has only been applied to calculate current active lives mortality rates and is not used to factor in future improvements in this document.

9 LTC prevalence of the German population in compulsory LTC insurance is slightly below 1 per cent. The influence of the zero-prevalence assumption is hence negligible.

In the past 20 years, mortality rates for Germans aged 50 and over decreased by slightly more than 2 per cent annually. Similar developments can be found for Japan (Table 2).

Table 2: Annual Improvement in Population Mortality[10]

Annual improvement in population mortality									
Germany					Japan				
	1988 - 1998		1998 - 2008			1985 - 1995		1995 - 2005	
Age	Men	Women	Men	Women	Age	Men	Women	Men	Women
50	2%	1%	2%	1%	50 - 54	2%	1%	1%	2%
55	3%	2%	2%	1%	55 - 59	2%	2%	1%	2%
60	2%	2%	2%	1%	60 - 64	0%	2%	2%	2%
65	1%	2%	4%	3%	65 - 69	1%	3%	2%	3%
70	2%	2%	3%	3%	70 - 74	2%	3%	2%	3%
75	2%	2%	3%	3%	75 - 79	2%	3%	2%	3%
80	2%	3%	2%	2%	80 - 84	1%	3%	3%	3%

Even if only half of this trend is assumed as a lasting annual improvement rate for mortality for each age, this would lead to an increase in German life expectancy of about 2.5 years (men: 2.5; women: 2.6) for people currently aged 50, compared to LE without a further decrease of mortality.

What does a moderate change in total life expectancy of 2.5 years mean for LTC, if it is gained by a constant permanent trend on one of the three transition probabilities of the model only? This is analysed in the following scenarios and is then complemented by a scenario assuming that an identical trend is applied to all transition probabilities.

Scenarios

Active Lives

An annual improvement in active lives expectancy of 2.5 per cent for men (women: 3.5 per cent) would lead to the increase in total life expectancy of 2.5 years. Since the mortality rates of disabled lives shall remain unchanged, the prevalence rates of disabled lives are slightly declining for each age whereas the absolute number of disabled lives increases. Fewer people die before they become frail and require care thus worsening the total claims experience. The level premium for a 50-year old would need to be higher by about 20 per cent (men: 21 per cent; women: 18 per cent) to take this trend into account. Accordingly, a reducing prevalence rate of disabled lives can lead to dramatically false conclusions.

Disabled Lives

On its own, a reducing disabled lives' mortality does not change the number of new claimants, but increases the cost per claim and the prevalence rate of disabled lives. In this scenario, the disabled lives' mortality improves with a rate of 2.6 per cent for male policy-holders (1.8 per cent for females) per year. Premiums react very sensitively to this trend and would roughly need to be doubled (men: +128 per cent; women: +73 per cent).

Incidence Rates

Declining incidence rates for disability (and being in need of care) are a positive possible explanation for an increasing life expectancy. The number of new LTC claimants would decrease and consequently the prevalence rates of disabled lives as well as the total number of claimants. This in turn will lead to lower premium rates required to cover the expected claim costs. But the calculations show that a decrease of incidence rates alone cannot explain future mortality trends. An annual decline of 8.4 per cent is needed to achieve the desired increase in life expectancy for men (5.3 per cent for women). In this case the required premium would drop by 85 per cent for men and 71 per cent for women.

[10] Own calculations based on destatis and Japanese Statistics Bureau.

Even if incidence rates were to drop to zero, this would only result in a three-year higher LE for men and 3.7 years for women. This limitation is caused by the shape of the underlying mortality rates. In high ages the difference between active and disabled lives is less pronounced than in younger years, so a dependency above age 90 will not lead to a significantly reduced life expectancy.

Combined Scenario

In this scenario all three biometric factors are changed by an equal relative amount with the aim of increasing the total life expectancy by 2.5 years. This was achieved with an annual rate of change of 1 per cent for men and 0.9 per cent for women. As in the first scenario, a slight decrease in the prevalence rates of disabled lives can be observed, but the increased LE leads to additional claims and now also longer benefit periods. To cover the extra cost, premiums for policies would need to increase by 27 per cent for 50-year old men (20 per cent for women), compared to a scenario without trends.

In an extreme scenario, the benefits of decreasing incidence rates would finally dominate the effect of reducing mortality on LTC costs. But the combined trend would need to reach more than 8 per cent until the premiums for men became cheaper than in a scenario without a trend (women: > 7 per cent). In this case about 80 per cent of the policy-holders would live to age 120—making the assumptions unrealistic.

Figure 3[11]: Changes in Level Premium

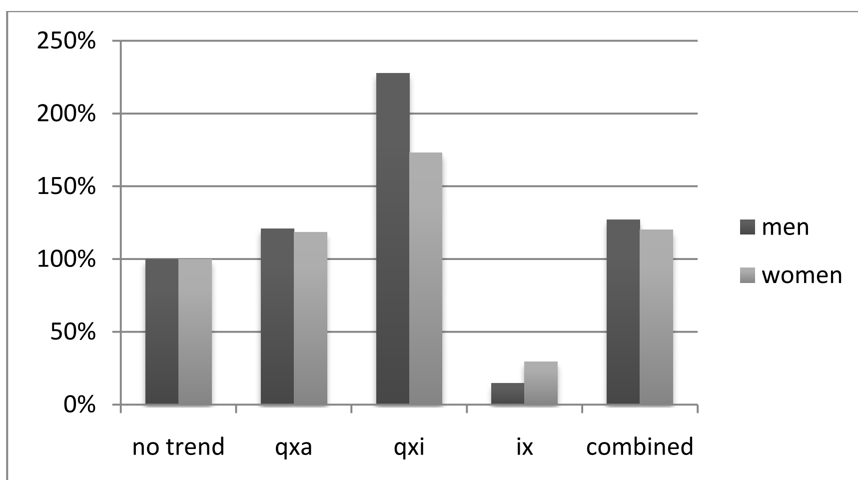
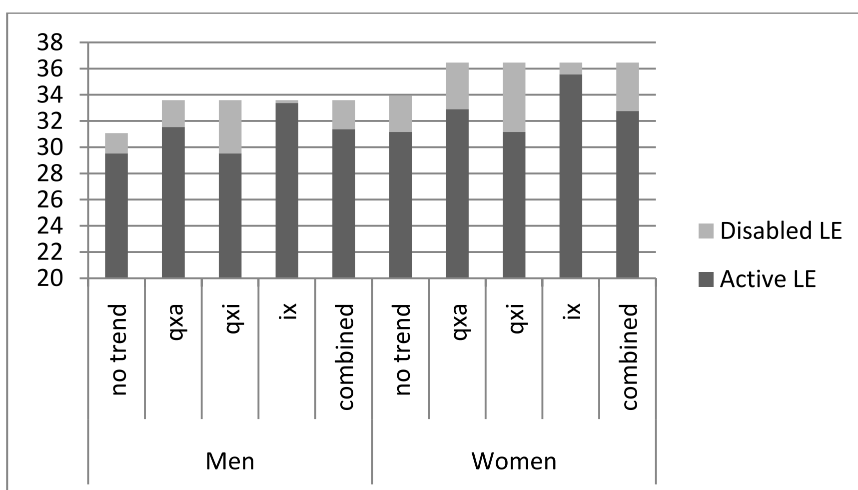
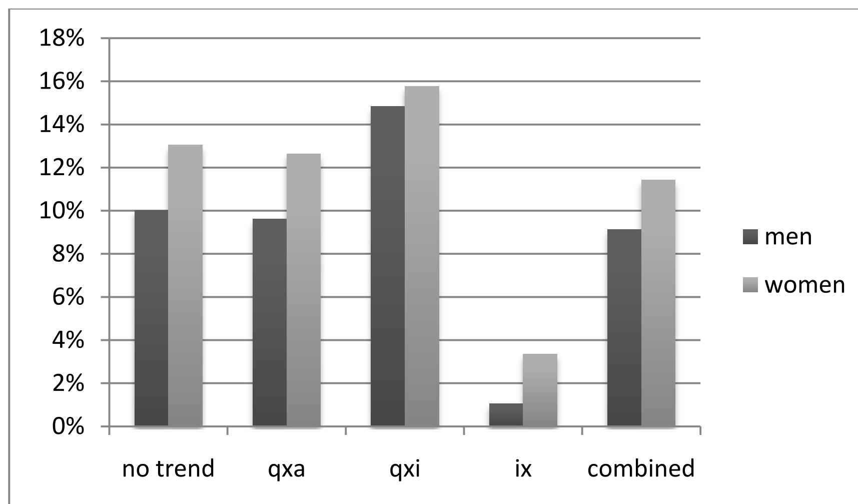


Figure 4[12]: Changes in Life Expectancy



[11] Own calculations.
[12] Own calculations.

Figure 5[13]: Prevalence Rates of Disabled Lives at Age 80



Discussion and Conclusion

The model used has some limitations. Besides ignoring lapses, trends in biometric risks will neither be constant over time, nor over all ages. Also, a reduction of disabled lives' mortality without a reduction of active lives' mortality might lead in the chosen model to a situation where the disabled lives' mortality is lower than the active lives' mortality at very high ages, which seems implausible. But despite these constraints, the scenarios are revealing.

Decreasing incidence rates have been observed in some LTC portfolios. But this cannot fully explain the gains made in life expectancy of the past. In addition mortality for active and/or disabled lives declined. The fourth scenario showed that the reducing mortality rates may have a stronger effect on the profitability than the decreasing incidence rates. For this reason trend assumptions regarding decreasing incidence rates should be used with much care, if at all, when pricing LTC insurance when at the same time the mortality trends are not well understood. Particular care is required when analysing prevalence rates of disable lives. Although they are and will remain an important way to evaluate the development of LTC costs, in itself they are not a reliable source for an evaluation of a block of LTC policies unless considered with other information. Both the combined scenario and the active lives' mortality trend scenario led to decreasing prevalence rates but increasing costs for LTC.

In general, the significance of the active lives' mortality is often underestimated. Unlike other risk products, it has a vital impact on premium settings in LTC insurance. Also, the longevity risk may not be taken appropriately into account if a standard annuitants' mortality table is used for pricing.[14] At higher ages where the prevalence of disabled lives is in excess of 10 per cent, the mortality of disabled lives will significantly influence the overall mortality rates of the aggregate lives.

Decreasing disabled lives mortality is the possible driver for increasing life expectancy with the most negative consequences on LTC pricing. Only very limited data is available on this biometric risk amongst insured lives to determine a possible trend. Only a more mature portfolio could provide sufficient information. A limited benefit period, as is common in the U.S., Israel and Asia, may protect the insurance company against the scenario of longer than expected LTC claim periods to some extent. On the other hand, it weakens the financial protection offered to policy-holders.

The scenarios outlined above probably rather under-estimate the impact of future trends. Firstly, the future improvement in life expectancy chosen was on the low side. Secondly, the necessary premium adjustment was calculated for new business. As LTC insurance has a strong savings component, premium adjustment for existing business will be even more significant than for new business. Assuming future expected claims experience 30 years after policy issue to be 10 per cent higher for the

[13] Own calculations.
[14] For LTC riders or special product designs the situation may be different.

remaining period than initially expected as a result of longer claim durations, the premium hike for the then 80-year old insured person would be about 50 per cent to cover the change in the future risk.

Premium increases have already been necessary in a number of markets and, besides binding significant resources, placed some mistrust of LTC insurance in the minds of consumers and regulators. As even current data for LTC is afflicted with insecurity, risk mitigation through careful product design and pricing are both necessary. A continuous monitoring of the emerging portfolio experience is key to understanding the dynamics affecting an LTC portfolio. Increasing life expectancy should not be ignored but taken into account in the pricing. The above calculations suggest that trend assumptions for the active lives' mortality alone may be an appropriate (simple) approach to cope with future developments. If a trend in another biometric risk is observed, a more holistic pricing approach is required.

III. INVITED ARTICLE II

Providing and Financing Aged Care in Australia

By Henry Ergas[*] and Francesco Paolucci[+]

Introduction

On current demographic projections, the number of Australians aged 65 to 84 years will more than double and the number of people 85 years and over will more than quadruple by 2051.[15] As ageing occurs, the challenge of providing long-term care of and to the elderly will become of increasing importance.

Two facts are central to this challenge. The first is that older cohorts are living longer than ever before, with a corresponding rise in the numbers expected to live beyond the age of 70 and hence to be at material risk of requiring care.[16] The second is that younger cohorts are having fewer children, which among other things, means they will have fewer voluntary carers to draw on when they reach old age. These trends alone—the sheer increase in the numbers of the very old, especially relative to the potential population of carers—make large and sustained increases in the demand for aged care inevitable.

However, the impacts on the structure of demand for care are also important, though more complex. Demand for care is likely to shift from being a continuum that moves from home, into low-level residential care and then (often for only a short time) into high-level residential care, towards a pattern concentrated at the two ends of the spectrum. At the same time, the temporal structure of care—i.e. the distribution of durations of care in the recipient population—is likely to change. Thus, long durations are likely to become more common in high-level care, as that care becomes less of an immediate antecedent to death. Already, at all levels of frailty, residents with dementia remain in residential care for longer than other residents.[17] Short stays will also remain common, and may become more so, both because of the greater prevalence of intermittent care and because many admissions continue to be as a result of acute events. In the last three months of 2006, for example, 10.9 per cent of discharges from high-level residential care occurred less than one month after admission and 12.2 per cent of discharges occurred between one to three months after admission, with 70.0 per cent and 69.8 per cent, respectively, of these discharges being due to death. As a result, the distribution of durations of residential care, which already is bimodal, may become even more so, with a bunching of durations at the relatively short and relatively long ends of the duration spectrum.

[*] Senior Economic Advisor at Deloitte Economics Australia.
[+] PhD., Research Fellow at the Australian Centre for Economic Research on Health at the Australian National University. Corresponding author: Building 62, Mills Road, Acton, 0200 ACT, Australia; Francesco.Paolucci@anu.edu.au.
[15] Linacre (2006), Australian Government (2010).
[16] See Cullen (2007).
[17] See Lindsay, Griffiths and Boero Rodrigues (2003).

These changes in the level, structure and duration of demand will impose a significant adjustment burden on the aged care sector. The total supply of care will need to increase, with large absolute rises being required in the level of provision in each part of the aged care spectrum. For example, for current ratios of places available to the aged population to be met in, say 2025, an absolute increase of 83,100 places would be required in low care (as compared to a total number of low care places of 86,000 in 2006-2007), with the corresponding increase in high care being of 87,400 places (as compared to a total number of high care places of 81,700 again in 2006-2007). At the same time, the structure of supply will need to shift, with larger increases in community care on the one hand, and high-level residential care on the other. Supply side adjustments will also be impelled by changes in the costs of the different types of aged care.[18] The resulting difficulties will be made all the more acute by the fact that the supply of the formal aged care workforce will also face considerable pressure as the share of the population requiring care increases.

Providing for Aged Care Costs in Australia

Over the coming decades, funding aged care will place a growing burden on the community. Currently, 0.8 per cent of Gross Domestic Product (GDP) goes on the provision of residential aged care and community care packages. Under current policies, public and private expenditure on aged care will more than double to 1.8 per cent of GDP by 2049-2050. Growth in spending on residential aged care is the main contributor to the increase (from 0.6 per cent to 1.4 per cent of GDP), although spending on community care also is projected to rise significantly (from 0.2 per cent to 0.4 per cent of GDP).[19]

At the moment, the bulk of aged care funding is provided by the Commonwealth through consolidated revenue. Funding aged care in this way amounts to requiring current taxpayers, who are mainly in the labour force, to pay for the costs of caring for older Australians. There is clearly a case based on social equity for the community to continue to fund the cost of long-term care for those older Australians who could not do so themselves. In a "pay-as-you-go" system, this redistribution occurs primarily through a shift in income from the working population to those who are retired. The extent of the inter-generational wealth transfer this entails should not be exaggerated. An effect of Commonwealth funding of aged care is to protect the bequests made by long-term care recipients to their heirs. The exclusion of the family home from the assets tests used in determining eligibility for aged care subsidies is important in this respect, as the family home is the primary asset most older Australians own and are in a position to pass on. As a result, the extent of the redistribution effected by the existing "pay-as-you-go" system depends on the degree to which the taxes used to cover current aged costs are correlated with the bequests that are being preserved. As that correlation seems likely to be quite high, the system may cause fewer intergenerational transfers than commonly thought. This also means that an increase in the degree of means-testing of aged care assistance may not be as favourable to current taxpayers, in terms of their lifetime income position, as appears to be the case. Greater means-testing of aged care assistance is effectively also a tax on asset accumulation during working life. This can reduce the incentive for lifetime savings, as well as distorting accumulation choices towards assets that escape the means-testing. These impacts need to be set against any efficiency enhancement that means-testing (or increased means-testing) may allow in terms of immediate reductions in tax burdens and associated tax wedges.

The financial burden aged care costs can impose on older Australians is already material. For example, some 25 per cent of female and male part-pensioners with total income of A$30,000 per annum and assessable assets of A$160,000 who enter permanent residential low care will face an additional lifetime cost of more than A$78,000 and A$48,000 respectively (over and above the normal living costs they would have met if they had not entered residential aged care). Similarly, 25 per cent of female and male self-funded retirees with total income of A$60,000 per annum and assessable assets of A$280,000 who enter permanent residential low care will face an additional lifetime cost of more than A$153,000 and A$94,000 respectively. If they choose to receive permanent residential care on an extra service basis, then 25 per cent of women and men with this level of wealth will face an additional lifetime cost of more than A$257,000 and A$157,000 respectively.[20] These are clearly substantial amounts, even relative to average (much less median) wealth levels.

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[18] Lincoln Gerontology Centre (2002); Australian Institute of Health and Welfare (2004).
[19] Australian Government (2010).
[20] See Cullen (2007).

Despite those increases, it is likely that the Australian arrangements are still at the relatively redistributive end of the international spectrum,[21] and that pressures for a further move to "user pays" will persist, regardless of which political party is in office. This is most obviously because the burden on taxpayers and on the Commonwealth budget associated with the existing arrangements seems likely to increase sharply over time. While aged care funding currently consumes about 3 per cent of Commonwealth revenues, by 2046-2047, Commonwealth expenditure on aged care is projected to grow (on current policy settings) to about 9 per cent of Commonwealth revenues (assuming revenues remain at their long-term average of about 22 per cent of GDP). As noted above, the *Intergenerational Report 2010* projects that Commonwealth aged care expenditure will increase from 0.8 per cent of GDP, currently, to 1.8 per cent of GDP by 2049-2050. This is lower in absolute terms than the projected increase in heath costs, from 4 per cent of GDP to 7.1 per cent of GDP, and on the age pension, which is projected to increase from 2.7 per cent of GDP to 3.9 per cent of GDP. However, the rate of growth in expenditure is the highest in aged care. The pressures to reduce this growth, and to see more of the costs borne by beneficiaries, are therefore likely to become progressively greater. This raises the question of whether a further increase in the co-payment rate is feasible, much less desirable. An immediate constraint on placing a greater share of the cost of long-term care directly on beneficiaries is the income available to older Australians.[22] [23] It may be that markets would respond to an increased co-payment rate for aged care through the further development of financial products that allow consumers to convert relatively illiquid assets into current income (e.g. reverse mortgages). Another option would be to introduce a targeted element of pre-payment into the funding of aged care: that is, some mechanism by which future beneficiaries could set aside the amount needed to cover some or all of the care costs they were ultimately likely to incur.

Pre-Paying Long-Term Care

The risk with "pay-as-you-go" approaches is that they can prevent sufficient savings from occurring now to allow future burdens to be met without an unjustifiably large sacrifice to consumption. The question then is whether some form of pre-payment for long-term care costs is feasible and what form such pre-payment could most efficiently take.

As the risk of incurring long-term care costs is significantly, though not entirely, a function of longevity,[24] and the longer one lives the greater the likelihood of needing aged care and for longer, pre-payment for the cost of long-term care involves a substantial element of insurance against longevity risk (i.e. insurance against longevity risk). Traditionally, insurance against the risks associated with longevity was provided by superannuation schemes. These schemes amounted to buying an annuity, which provided an income stream for life in retirement. The move from such defined benefit schemes to defined contribution schemes has, somewhat paradoxically, removed this form of longevity insurance just as population ageing makes longevity risk a matter of greater concern. Moreover, annuities generally have high loadings and low rates of voluntary take-up.[25] It is of course possible for public policy to seek to incite greater annuitization—indeed, there are jurisdictions (such as the U.K. and Germany) where some degree of annuitization of retirement savings is mandatory. However, even were that to occur, it seems unlikely that the amount of those annuities could realistically provide for long-term care costs—much less do so efficiently.[26]

Rather, it would seem more efficient to allow the risk to be pooled through some form of insurance targeted at long-term care. The question, however, is the extent to which the risk of long-term care possesses the characteristics required for a risk to be insurable. Prima facie, there is no obvious reason why it should not be possible for private insurance markets to offer insurance against long-term care costs. Also insurance products aimed at covering long-term care costs exist in a number of countries. However, experience in Australia and overseas suggests that the widespread development and take-up of these products encounters substantial difficulties.[27]

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[21] See Karlsson, Mayhew and Rickayzen (2007).
[22] See Linacre (2006).
[23] Headey, Marks and Wooden (2004).
[24] See Cullen (2006a, pp. 5 and 6).
[25] See Poterba (2001).
[26] See Cullen (2006a, p. 7; 2006b).
[27] For the U.S., see Brown and Finkelstein (2004), who report that long-term care insurance accounts for only 4 per cent of U.S. long-term care payments, while health insurance generally covers 35 per cent of U.S. health outlays as a whole. For

Three factors seem to be involved:

- Complexities involved in devising and properly pricing long-term care insurance products, for example because the need for care depends to a considerable extent on the health of the potential recipient's partner.
- Voluntary markets for long-term care are most likely to be affordable for younger consumers, but those younger consumers are unlikely to be much concerned about long-term care, especially if they discount the future at hyperbolic rates.[28]
- Purely voluntary markets are likely to be constrained by the Commonwealth assurance to a universal and high-quality safety net services (i.e. public insurance).

As a result, it is not apparent that voluntary demand for long-term care insurance would be sufficient to make this an attractive market for insurers.[29]

Going Forward

Internationally there would appear to be a general consensus that the ageing of the population will drive the need for reform in long-term care.[30] Any reform of long-term care in the Australian context needs to balance the needs of social policy—for example, ensuring equity of access, including in geographic regions not normally amenable to market forces, and addressing the information asymmetries inherent to health markets and especially prevalent in the voluntary markets for long-term care insurance—with those of fiscal policy, while providing greater scope for competition, service differentiation and innovation than current arrangements permit.

Experience to date is not encouraging as regards the development of efficient, voluntary forms of pre-payment for long-term care. Superannuation alone is unlikely to be sufficient, at least in the relatively near term, for the vast majority of Australians. Annuities might provide a means of procuring some additional coverage against longevity risk, but the market for suitable annuities products is not well developed. Moreover, seeking to cover the risk associated with long-term care costs through annuities alone would likely imply inefficiently high-level of bequests. Finally, as the most direct form of cover—voluntary long-term care insurance—has not proved effective, the introduction of universal mandatory coverage with consumer choice of plan and (risk- and income-related) subsidies represents a viable and efficient option in the long term.[31]

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the U.K., see Johnson (2006), who reports very low take-up rates for private long-term care insurance in the U.K., and the withdrawal of most U.K. insurers from the field.

[28] See Cutler and Zeckhauser (2004).

[29] This conclusion is consistent with Brown and Finklestein (2004), who find that the greatest obstacles to the more widespread use of long-term care insurance lie on the demand side.

[30] See, for example, OECD (2006).

[31] One of the few jurisdictions where long-term care insurance appears reasonably widespread is Germany. However, it is arguable whether that insurance is genuinely voluntary; rather, it is essentially a complement to, and a means whereby high-income earners can opt out of, a compulsory savings scheme based on income-linked contributions (which exceed the cost of private long-term care insurance for high-income earners). A significant number of self-employed, who are not covered by the compulsory scheme, have no long-term care insurance cover, suggesting the insurance is not attractive to those who can avoid the levy (Paolucci, 2010).

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IV. INVITED ARTICLE III

The Demand for Voluntary Health Insurance in the Brazilian Two-Tier Health System

By Edson C. Araújo[*]

Introduction

The coexistence of public and private voluntary health insurance has become a central point of analysis in the majority of health systems around the world. Some argue that a greater role for voluntary health insurance (VHI) and private providers will "crowd out" the public health services and alleviate financial pressures on the public system (1); also it is claimed that the VHI would be more responsive to consumers' preferences than the public health services[32] and can result in a cross-subsidization between those privately insured and public users (2).[33] Others point out the negative consequences of a "*two-tier*" style of health care, such as little fiscal relief for the public system[34] and equity issues arising from the reduction of political pressure to improve the quality of public services when removing the higher demand individuals to VHI (3,4).

The existence of a VHI in presence of compulsory public health insurance creates a two-tier system (providing the same services at different levels of quality and price). Previous studies on demand for VHI have focused on the influence of socio-economic variables such as income, education, social class, occupation and risk of illness. Despite the role played by perceived quality on the consumers' choice for coverage, the link between the quality of public health services (or the quality gap[35]) and the demand for VHI is still unclear. There is a growing amount of literature showing that the demand for VHI is highly influenced by the perceived quality differentials between public and private services (5-7).

The classical analysis of the demand for health insurance is based on the Expected Utility Theory (EUT). It models the consumer's choice for coverage of risky events (illness) applying the expected utility maximization model (8). To cover uncertain outcomes, a risk averse individual purchases health insurance to avoid financial losses associated with an illness event. Using this approach in the presence of compulsory public coverage, only those more likely to be ill will purchase VHI. However, the evidence suggests that in presence of public universal coverage the quality differential between public and private services has an important role in the individuals' decision to purchase VHI (5-7). This

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[*] Contact e-mail: e.araujo@ucl.ac.uk—This paper presents preliminary results of the PhD thesis developed at the Institute for International Health and Development—Queen Margaret University, Edinburgh under the supervision of Professor Barbara McPake. Primary data collection was sponsored by a research grant offered by The Geneva Association in 2008.

[32] Particularly to access high quantity and quality of care for those with higher "willing-to-pay" for it.

[33] High-income individuals pay twice for coverage (taxes and health insurance premium), subsidising the public users.

[34] VHI lead to increasing the price levels of health goods in general which may result in increase costs of public health services.

[35] See Costa and Garcia (2003).

work explores the role of perceived quality differentials between public and private services on the demand for VHI in two-tier health systems.

The Brazilian Two-Tier Health System

In Brazil, as in many developing and developed countries, the private sector plays an important role in the provision and financing of health care services. In the last decades, health care in Brazil has undergone great expansion and economic reorganisation. In the late 1980s Brazil was one of the first Latin American countries to establish access to health care as a universal right, based on the principle that health care should be free at the point of use (9,10). Alongside this reform several types of private health care enterprises have expanded, including private hospitals, HMO-like groups operating for profit, and private voluntary health insurance plans. These changes over the last decade have resulted in the private sector emerging as a major payer of health care in Brazil, creating a two-tiered system of health care (10).[36]

Attributes for Health Coverage in Brazil

The main focus of this work is to identify the quality attributes that influence individuals' decision to purchase VHI in presence of compulsory public health coverage. To do so, a stated preference technique was used, named discrete choice experiment (DCE). DCE has been extensively used in health economics to elicit consumer choice values (10). It assumes individuals' choices for goods and services are based on the attributes (and levels) of these goods and services, therefore DCE allows observation of how a particular attribute influences the individuals' decision-making process (11). In the analysis of the choices for health care coverage in Brazil it was possible to identify a set of attributes that influence the decision to purchase VHI. This was done using qualitative methods (mainly focus group discussion) carried out in the State of Bahia, Northeast Brazil. Nine demand attributes for health care coverage were used, grouped into five general categories, as follows: *Access* (likelihood to receive care when needed, waiting times for general practitioner appointment, waiting times for a specialist appointment, waiting time for exams and tests); *Quality of care* (doctor's attitude and length of the appointment; cleanliness, infrastructure, and maintenance of waiting areas and consultation areas); *Financing scheme* (monthly payment—from nothing to R$300[37]); *Public health services* (likelihood that public interventions will be proposed—vaccinations for children, for example). For all attributes a level was identified to describe the actual description of the services in public and private sectors. For instance, for the public sector, waiting times were longer and interpersonal quality was lower, while the payment was zero (in comparison with three levels of payment for the private sector) and public services like vaccination for children were offered (option not available for the private sector). These nine attributes (and corresponding 20 levels) were randomly grouped in order to generate different choice sets to be presented to respondents (11,12). When choosing between different choice sets individuals are stating their preferences for the attributes for health care coverage and using appropriate econometric techniques, it is possible to observe the weight of each attribute in individuals' preferences for health care coverage. The final data collection was undertaken among a random sample of the population of the City of Salvador, Bahia.[38]

Results

Respondents were presented with the set of attributes mentioned above and asked to classify them in order of importance. The results show that quality of care in terms of interpersonal quality was reported as the most important attribute for 27 per cent of the respondents, followed by cleanliness (23 per cent), financing scheme (do not have to pay monthly, 10.5 per cent) and likelihood to receive care when needed (10.3 per cent). When stratifying these results across socioeconomic groups, it is observed that high-income groups value cleanliness as the most important attribute (27.6 per cent) followed by interpersonal quality (26.6 per cent) and likelihood to receive care when needed (10.8 per cent). While for the low-income group interpersonal quality was still the most important attribute (26.7 per cent) followed by cleanliness (23 per cent) and not paying monthly (11.2 per cent). These results probably reflect experiences in accessing health care services for different socioeconomic groups. The econometric analysis exhibits similar results, with staff attitude, cleanliness and likelihood of receiving

[36] Uga and Santos (2007) estimated that the private financing for health services in Brazil represents 44 per cent of the total health expenditures while VHI represents 22 per cent of the total expenditures.

[37] R$1 equal to US$0.57 on March 2010.

[38] 600 face-to-face interviews were undertaken during the months of May and June of 2009.

care when needed having the highest positive significant coefficients (meaning these have a high influence on the choice of health coverage). DCE also allows the calculation of the individual's willingness-to-pay (WTP) for a specific attribute. This is given by the ratio of any attribute and the cost attribute included (12). The highest WTP was found for the interpersonal quality attribute (R$353) and likelihood of receiving care (R$267). These results mean the average individual was willing to pay R$353 (approximately US$200) per month to have access to better interpersonal quality and R$267 per month (approximately US$151) to be sure that they will receive care when needed (avoiding queues and lack of resources in public facilities). These results emphasize the role of quality attributes (and the quality gap) on the individuals' decision to purchase health insurance coverage. The use of DCE presents a detailed picture of how these quality aspects affect the demand for VHI and also will allow observation of how the demand patterns differ across different social and economic groups. This is the next stage of the present study.

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V. INVITED ARTICLE IV

Microinsurance at Women's World Banking: Helping Poor Women Access Healthcare

By Madelyn Morris, Eamon Kelly and Anna Gincherman*

Women's World Banking and the Rationale behind Gender-Sensitive Microinsurance

Much of the world's poor—a majority of whom are women—remain without access to basic financial services including loans, savings accounts, and insurance products. Microfinance, defined as providing financial services to low-income clients, has emerged as one of the most effective tools for poverty alleviation, currently reaching over 130 million poor clients. Since its establishment, Women's World Banking has been committed to improving the economic assets, participation and power of low-income women and their households by helping them access financial services, knowledge and markets. Through our network of 40 leading microfinance institutions from 28 different countries, we have sought to bridge this gap by designing new microfinance products that cater to poor women's needs globally.

* Women's World Banking. Contact author: mmorris@swwb.org.

While historically the movement of microfinance has been largely credit-led, focused on providing only business enterprise loans, there is a high demand and very limited access among the poor to asset-building products, such as savings and insurance that are critical to achieving long-term poverty alleviation. It is estimated that only three percent of the low-income people in the world's 100 poorest countries have a microinsurance product, leaving approximately two billion people unserved.

We know from our experience working with microfinance institutions across the globe that healthcare exerts the most financial pressure on poor families given that they have little ability to absorb risk, and that medical emergencies can place a huge burden on households already struggling to stay afloat. The money required to cope with these unexpected health issues often forces families to redirect their capital away from school fees or business investments that are necessary for improving the livelihoods of the poor. Short-term solutions like selling productive assets such as livestock or farming equipment serve as a catalyst for moving further into poverty, depriving families of the tools they once had to generate revenue. For families that rely on a single income, the health of the breadwinner is imperative to survival. Moreover, medical problems are compounded by the fact that the poor are less likely to seek treatment early in an illness for fear of losing income by taking time away from their jobs or businesses.

Both poor men and women suffer from lack of access to healthcare, but the rationale behind serving women is threefold: women comprise 70 per cent of the world's poor, their cultural roles make them the primary caretakers and they have unique health needs and physical vulnerabilities that make them a critical segment to target in the battle against poverty.

Extensive research conducted in over 15 countries by Women's World Banking on product development consistently indicates that gender is an important criterion to segment the market. Women's exposure is exacerbated by a number of factors—women earn less than men, have less ownership and control of property, frequently suffer limited rights, and are more vulnerable to physical violence. Women also face the medical risks associated with childbirth and pregnancy, and are more vulnerable to infection from deadly diseases like HIV/AIDS.[39] And yet, the majority of the microinsurance available precludes care for some of these most pressing health concerns.

As a result, generic insurance (gender-neutral insurance) for women is often inadequate for a variety of reasons. Research has revealed that across cultures women traditionally bear responsibility for managing health, childcare and other lifecycle needs. When a serious illness befalls a family member, the woman typically attends to the needs of the ill person taking her away from her business and profits associated with that work. In countries where the government covers health care costs, the woman as caregiver still has numerous costs that she must bear including transportation to the hospital, communications with family members and other miscellaneous costs not provided for in standard microinsurance products.

In response to this void, Women's World Banking set out to design a product that would be easy to implement, responsive to women's needs, and sustainable for the microfinance institution delivering the product.

Pioneering the Women's World Banking Caregiver Policy in Jordan

In April 2010, Women's World Banking helped its network member Microfund for Women in Jordan launch The Caregiver Policy (*ri'aya* in Arabic), a first-of its kind insurance product that helps women cope with the financial burdens associated with a medical emergency. This gender-sensitive policy designed specifically for women provides coverage for any incidental expenses incurred as a result of hospitalisation, including childbirth. In partnership with Zurich Financial Services Group and their local Jordanian partner Al Amara, and with support from the International Labour Organization (ILO), Women's World Banking is making this innovative insurance product available to Microfund for Women's 52,000 borrowers, 97 per cent of whom are women.

The Caregiver Product

To get coverage under Caregiver, clients pay a nominal monthly premium with their loan repayment and receive coverage equivalent to around US$14 for each night they stay in the hospital. Unlike the

[39] Banthia, Anjali; Johnson, Susan; McCord, Michael J.; Mathews, Brandon (2009) *Microinsurance that Works for Women: Making Microinsurance Programs Gender Sensitive.* Geneva: International Labour Organization.

majority of microfinance products available, the Caregiver health insurance was designed to cover all hospital visits related with pregnancy, a feature that Women's World Banking felt was critical to include. Clients can use their coverage on anything from transportation to a medical facility, to food, to covering any loss a woman has suffered while her business has been closed due to a medical emergency. Currently, all of Microfund for Women's clients are enrolled in the programme when they take out a new loan, and the product has no exclusions for pre-existing illness. This last feature is particularly unusual for health microinsurance, but has been essential to ensuring that clients have access to benefits without a complicated claims process. This has made the insurance simple to explain, market and implement.

One of the challenges Women's World Banking faced during implementation was developing a marketing and education campaign that resonated with Jordanian women and conveyed the use and importance of health insurance. For a population that has had limited exposure to health products the goal was to create an accessible educational tool that would help loan officers explain the product features of the Caregiver to any MFW client, even those who are illiterate. To respond to this challenge, the marketing team developed an accessible visual storybook that demonstrates the ways in which clients can use the product to protect their entire family in a time of crisis. To do this, the team created a character called Um Mohammed who, along with her family, appears on all promotional materials. The final image in the storybook shows Um Mohammed considering all the ways she can use her claim money, after spending the night in the hospital for an injury, to ease the financial burden on her family. The marketing campaign has thus far proven effective and resulted in clients having a clear understanding of how to submit claims and complete paperwork; 80 per cent of clients have been able to fill out all the necessary forms without asking for assistance.

In May 2010, Microfund for Women awarded its first claim to Naela Hamdan who received a check for three days of lost income while she was in the hospital for a stomach infection. Her feedback on the product was very positive: *"We were very happy when we heard about the programme; I didn't expect to be the first beneficiary. I had a stomach infection and I had to stay at the hospital for three days. MFW quickly responded to my claim… and I got US$42, US$14 for each night I spent in the hospital, [since] I had to close my business, such a programme brings relief to the mind".*

The results of the pilot have been outstanding, and have demonstrated that the product is meeting women's critical and unique health needs. As of 31 August 2010, a mere four months after the product launch, there are 2,117 clients with policies. Thirty-seven claims have been submitted and settled, and half of them have been for pregnancy-related hospitalisation, a statistic that confirms the demand for a product that covers maternity-related hospital visits. Resolving claims has taken an average of six days, and a majority of the claimants who were surveyed about the policy were happy with the speed of payment. The pilot has proven that there is a demand for gender-sensitive microinsurance, and that such products can be sustainable.

Expanding Access to Healthcare

There is a clear need to for microinsurance in developing countries, and yet the poor in those countries are 100 times less likely to have any type of insurance than those in developed nations.[40] However, there is much research that indicates there is an immense potential to introduce these products. In a report produced in cooperation with the MicroInsurance Centre and released last November, the insurance company Lloyds stated that *"microinsurance is effective even in markets with little experience of insurance, as long as products, procedures and policies are simple, the premiums are low, the administration is efficient and the distribution channels are innovative".*[41] This emphasizes the importance of developing a sound, simple, customer-centric product.

Women's World Banking hopes to close the gap in health insurance access by replicating the product in other countries, and by developing new products that combine the expertise of microfinance institutions on the ground and of insurance providers to deliver innovative, effective and efficient products that serve the poor. A number of microfinance institutions and insurance companies in Bangladesh, Egypt, Kenya, Mexico and Peru have expressed a strong interest in introducing the Women's World Banking Caregiver policy. The potential for client outreach in just these five countries alone is more than three million poor people.

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[40] Banthia, Anjali, *et al.* (2009) Op. Cit.

[41] Lloyds and the Micro Insurance Centre (November 2009) *Insurance in Developing Countries: Exploring Opportunities in Microinsurance.*

Currently, Women's World Banking is exploring a *Family Caregiver Insurance* which would be an expansion of the existing Caregiver product to cover not only the individual but their family with only a nominal increase in premium. Market research conducted with Microfund for Women clients revealed a strong demand for family coverage. Women's World Banking is also in the process of developing a health insurance product that would provide coverage for a specified list of illnesses that most severely affect low-income women.

Continued innovations in microinsurance, and gender-sensitive microinsurance in particular, are critical in the fight against poverty. WWB was founded on the belief that when a woman is given the tools to develop a small business, build assets, and protect against loss, she is empowered to change her life and that of her family. Today, the WWB network collectively serves over 24 million clients, 80 per cent of whom are women. Thanks to our partnership with Microfund for Women in Jordan, we are one step closer to delivering microinsurance to our low-income clients across the globe.

VI. SPECIAL OCTOBER 2010 ISSUE OF THE GENEVA PAPERS ON HEALTH

The Geneva Association is pleased to announce a special issue on health of

The Geneva Papers on Risk and Insurance

Issues and Practice

Vol. 35 – N°4 – October 2010

SPECIAL ISSUE ON HEALTH

Editorial
Christophe Courbage

Risk-Type Concentration and Efficiency Incentives: A Challenge for the Risk Adjustment Formula
Richard C. Van Kleef, Konstantin Beck and Florian Buchner

Risk Equalisation in Ireland and Australia: A Simulation Analysis to Compare Outcomes
John Armstrong and Francesco Paolucci

Prescription Drug Coverage and Medicare Spending among U.S. Elderly
Baoping Shang and Dana Goldman

Health Care Reinsurance and Insurance Reform in the United States: A Simulation Model
David Bernstein

Analysis of Adverse Selection and Moral Hazard in the Health Insurance Market of Iran
Gholamreza Keshavarz Haddad and Mahdieh Zomorrodi Anbaji

Evaluating Sustainability of Medical Insurance Scheme for Urban Employed Individuals in China
Xiong Linping, Zhang Lulu, Tang Weidong and Liu Hong

Impact of the Introduction of the Social Long-Term Care Insurance in Germany on Financial Security Assessment in Case of Long-Term Care Need
Andy Zuchandke, Sebastian Reddemann, Simone Krummaker and J.-Matthias Graf von der Schulenburg

Early Retirement Among Men in Britain and Germany: How Important Is Health?
Jennifer Roberts, Nigel Rice and Andrew M. Jones

For further information on *The Geneva Papers*, please visit:
http://www.palgrave-journals.com/gpp/index.html.

VII. CONFERENCE SUMMARY—LONGEVITY 6

Summary of the Sixth International Longevity Risk and Capital Markets Solutions Conference

By David Blake[*] and Michael Sherris[+]

The International Longevity Risk and Capital Markets Solutions Conference is the major annual international conference bringing together leading international industry and academic minds as well as policy-makers to meet and discuss not only the assessment of longevity risk, but also the market and government developments and responses needed by pension funds and insurance companies to manage this risk.

The Sixth International Longevity Risk and Capital Markets Solutions Conference (Longevity 6) was held on 9 and 10 September 2010 in Sydney at the famous Bondi Beach. The conference followed the highly successful events over the last five years in London, Chicago, Taipei, Amsterdam, and New York. Longevity 6 was hosted by the Australian Institute for Population Ageing Research and the Australian School of Business at the University of New South Wales (UNSW). The key themes of Longevity 6 were “Reinsurance and Financial Markets Solutions” and “Government Role, Public and Private Sector Solutions”. The conference attracted 120 participants from 15 countries in Asia, the U.K., Europe and North America, proving to be highly successful with strong industry and researcher participation.

David Blake (Pensions Institute, U.K.) opened the conference by highlighting the significance of the longevity risk in pension plans and insurers, and the need for reinsurance and financial market solutions as well as the involvement of key policy-makers. Developments in the life market including recent longevity swaps and the formation of the Life and Longevity Markets Association (LLMA) and their role in providing solutions were outlined. The aims of the conference in bringing together leading international practitioners and researchers and providing policy and market solutions was emphasized.

There were three plenary sessions with eight international plenary speakers and 11 workshop sessions with 34 papers presented at the conference. At the opening plenary session, Guy Coughlan (JP Morgan, London) covered the developments in the formation of the Life and Longevity Markets Association (LLMA). There are ten current members of the LLMA comprising AXA, Deutsche Bank, J.P. Morgan, Legal & General, Morgan Stanley, Pension Corporation, Prudential, RBS, Swiss Re, and UBS. The challenges of the market and the role of LLMA were outlined as well as the draft Longevity Index Framework published by the LLMA on 18 August 2010. Morton Lane (LaneFinancial, Chicago and University of Illinois) then presented his thoughts on the development of the longevity market from the perspective of the insurance-linked securities (ILS) market. He noted how the ILS market had developed a bond structure, whereas the transactions in the longevity market have been swap- or derivative-based. He discussed the importance of a “trigger” in the form of an event in the ILS market that was not evident in the longevity market, as well as the pricing role of the ILS market and the need for transparency of pricing in the longevity market. Guy Coughlan then presented on the role of longevity indices and hedging of longevity risk providing a framework for evaluating basis risk and hedge effectiveness along with a case study. Index-based transactions will, and currently do, play a major role in managing longevity risk, and these require the development of reliable longevity indices.

The first group of workshop sessions had an emphasis on modelling and pricing longevity risk and instruments to manage the risk including options. Index construction and the role of collateral were also covered. Economic, financial and econometric approaches were featured in the papers presented in this session. The second group of workshop sessions covered hedging and hedging effectiveness for longevity risk and various products as well as optimal portfolio choice, including life annuities. Other issues related to health and self-insurance of longevity risk were also covered.

[*] Pensions Institute, CASS Business School, London.
[+] AIPAR, Australian School of Business, University of New South Wales, Sydney.

In the second plenary at the close of the first day, Ross Jones (Member and Deputy Chairman of the Australian Prudential Regulation Authority) provided an international perspective as a regulator, including the policy response to the financial crisis in pensions, as well as setting the Australian longevity market in context. He highlighted how regulators have a role in implementing policies but do not develop policies. He addressed the issues of funding of DB plans, the adequacy of retirement savings and the lack of financial instruments to hedge longevity risk. He summarised key OECD recommendations, explaining how the government can help by providing updated mortality tables that incorporate longevity improvements, can play a role by developing a longevity index that can be used for pricing, and can issue inflation-indexed long-dated bonds to facilitate asset-liability management. The importance of investing in research was also noted as a significant part of the solution for both the government and the private sector. Martin Clarke (Executive Director of Financial Risk, Pension Protection Fund, U.K.) then covered how the Pension Protection Fund in the U.K. approaches longevity risk, including its approach to modeling and hedging. The fund targets self-sufficiency over a longer horizon and sees longevity de-risking as a longer-term strategy. David Blake (Professor of Pensions Economics and Director of the Pensions Institute, Cass Business School) then made the case for why the government should issue longevity bonds. This will improve the efficiency of the retail annuity market, enhance the hedging of aggregate risk in financial markets and provide a price discovery market for longevity risk currently lacking. The government has an important role to play because it is the only participant who can provide the required intergenerational risk-sharing.

The third group of workshops at the start of the second day covered policy and regulatory issues, reverse mortgages and the related issues for this longevity product as well as modelling of longevity including econometric techniques and spatial modelling.

In the final plenary at the end of the conference, Marco Flores (Managing Director, Crédit Suisse, London) provided a coverage of the longevity swap market and how these transactions actually work in practice and Michael Crane (Managing Director, Coventry Capital, U.K.) covered the regulatory developments in the life settlement market in the U.S., the “micro longevity risk” market. This was followed by a Panel session with Guy Coughlan (JP Morgan, London), Morton Lane (Lane Financial, Chicago), Brandon Lewis (Director, Capital Markets, Coventry Capital, Sydney) and Lawrence Tsui (Director, Life & Health, Swiss Reinsurance Company Ltd, Hong Kong) to discuss three topics: 1) sustainable products/structures are being provided by innovation in the private sector for longevity risk management; 2) active government support is required for the development of a wholesale and retail market in longevity risk, and 3) education of investors is required to ensure the success of a market in longevity risk. It was generally agreed that the market is innovating and this is healthy for the future. Some aspects of government support would be welcome whereas the government taking on more longevity risk was less enthusiastically supported. Although education is important, some forms of education revolving around product sales and marketing were less beneficial.

The conference was made possible with the support of the excellent range of international speakers as well as financial support from the sponsors: PricewaterhouseCoopers, APRA, AIPAR, Coventry Capital, Swiss Re and the Institute of Actuaries of Australia. Support from the Pensions Institute at CASS Business School and the School of Actuarial Studies at UNSW resulted in a highly efficient administration of the event.

Future Longevity conferences are scheduled for Frankfurt in 2011, Toronto 2012 and Beijing 2013.

The Geneva Papers on Risk and Insurance—Issues and Practice will publish a dedicated Issue of selected papers presented at the conference in October 2011. All papers will be subject to the journal review process.

Conference proceedings including presentation and papers are available from the website *http://www.longevity-risk.org*.

VIII. 7TH GENEVA ASSOCIATION HEALTH AND AGEING CONFERENCE

7th Geneva Association Health and Ageing Conference

U.S. and French Long-Term Care Insurance Markets Development

18-19 November 2010, Paris

Co-organised with Willis Re

Venue: La Maison des Polytechniciens**,** 12 rue de Poitiers; 75007 Paris

The U.S. and France are the two most developed long-term care insurance markets. Whilst these two markets differ in various respects, both will be impacted by new reform proposals. The aim of the conference is to better understand the differences and similarities of these two major long-term care funding approaches. The conference will address the respective market situations, public reforms to be implemented and product innovation perspectives, from both the U.S. and French views.

For more information, please contact: *christophe_courbage@genevaassociation.org*.

Thursday 18 November

13.30-15.00 Session 1. Long-term care epidemiology and risk profiles

- *Long-term care in France—Risk profiles and trends*
  Dr Karine Pérès, Inserm and ISPED, University of Bordeaux, Bordeaux
- *The U.S. long-term care trends (tbc)*
  Dr Juergen Bludau, Harvard Medical School, Boston

15.30-17.00 Session 2. LTC Insurance markets and products

- *The U.S. private long-term care insurance marketplace: evolution, current market trends, and future challenges*
  Susan Coronel, Senior LTC Director, Product Policy Department, America's Health Insurance Plans, Washington
- *Group long-term care insurance in France: a catalyst for the market*
  Claudine Brom, Head of LTC Development, Group Insurance, Axa France, Paris
  David Fischer, LTC Development, Group Insurance, Axa France, Paris

17.00-17.45 Special presentation

- *Long-term care risk monitoring and profitability: impacts of Solvency 2*
  Christophe Izart, Deputy Chief Risk Officer, Ag2r La Mondiale, Paris

Friday 19 November

8.30-10.00 Session 3. Actuarial and risk monitoring of LTC insurance

- *Actuarial and technical issues in the French LTC insurance market*
  Sophie Michon, Chief Actuary Individual Life and LTC, Groupama SA, Paris
- *Rousseau vs Descartes, or the actuarial challenges in the multi regulated US market*
  Etienne Dupourque, Director Pricing and Product Development, LifeCare Assurance Company, Los Angeles

10.30-12.00 Session 4. Financing LTC: public framework and benefits, relation with private insurance

- *U.S. perspectives in financing LTC*
  Holly Bakke, Director, Strategic Initiatives Insurance Group, Whitehouse Station
- *Public LTC benefits and private LTC insurance in France: dialectics and possible partnership*
  Pierre-Alain de Malleray, Inspecteur des Finances, Paris

12.00-13.30 Session 5. Future perspectives: products, services and models

- *Waiting for Godot: reflections on industry challenges, opportunities and what lies ahead*
  Peter M. Goldstein, Univita, Executive Vice President, Business Development, Los Angeles
- *Revamping LTC insurance, heading for a mature and sustainable market*
  Pierre-Yves Le Corre, Executive Director Life & Health, Willis Re, Paris

IX. PUBLICATIONS ON HEALTH AND AGEING ISSUES

Health Care Systems in Developing and Transition Countries—The Role of Research Evidence
Edited by Diana Pinto Masis and Peter Charles Smith, Edward Elgar Publishing, 2009. This book presents a selection of 10 studies that illustrate the powerful tool that carefully conducted research can offer policy-makers seeking to address common health policy issues. The studies included in this book illustrate the major gain to patients and citizens that can accrue from research efforts, stimulating research capacity in developing countries.

Health Systems Governance in Europe—The Role of European Union Law and Policy
Edited by Elias Mossialos, Govin Permanand, Rita Baeten, and Tamara K. Hervey, Cambridge University Press, 2010. This book, a co-publication by the European Observatory on Health Systems and Policies and the European Social Observatory (OSE), was funded by the Belgian federal health authorities (SPF Santé Publique) and the National Institute for Health and Disability Insurance (RIZIV/INAMI). It offers state-of-the-art academic discussions on a number of current and emerging governance issues in EU health care policy, including regulatory, legal, "new governance" and policy-making dynamics. The study looks into different areas of EU policy and law-making that have an impact on national health care systems. It provides policy-makers with a compelling and rigorous analysis of the real and potential impacts of EU integration on the organisation of health care provision and the protection of public health, highlighting the need to balance economic and social imperatives.

A Short Guide to Longer Lives: Longevity Funding Issues and Potential Solutions
Swiss Re publication, 2010. The report warns that underestimating life expectancy by just one year can increase a pension plan's liabilities by up to 5 per cent. It examines what (re)insurers and other parties can do to help address the challenges faced by societies as a result of increased life expectancy. The report also includes recommendations for the key parties involved in addressing longevity funding issues. The report is available at *http://media.swissre.com/documents/Longer_lives.pdf*.

The Aging Population and the Competitiveness of Cities
Peter Karl Kresl and Daniel Ietri, Edward Elgar Publishing, 2010. This book illustrates the way an ageing population can have a positive impact on urban centers, including the move by large numbers of seniors from the suburb to the city, where their disproportionate consumption of education and the arts help rejuvenate the centers. The authors conclude that a large and active senior population has the potential to assist a city in the achievement of its strategic economic objectives.

Tackling Chronic Disease in Europe. Strategies, Interventions and Challenges
Reinhard Busse, Miriam Blümel, David Scheller-Kreinsen and Annette Zentner, Observatory Studies Series, n°20, 2010. Chronic conditions and diseases are the leading cause of mortality and morbidity in Europe, accounting for 86 per cent of total premature deaths. The epidemiologic and economic analyses in this book suggest that policy-makers should make chronic disease a priority. This book highlights the main issues and focuses on the strategies and interventions that policy-makers have at their disposal to tackle this increasing challenge. Full text available for download at:
http://www.euro.who.int/__data/assets/pdf_file/0008/96632/E93736.pdf.

Implementing health financing reform—Lessons from Countries in Transition
Edited by Joseph Kutzin, Cheryl Cashin, Melitta Jakab, European Observatory on Health Systems and Policies, 2010. This book analyses health financing reforms in central and eastern Europe, the Caucasus, and central Asia. Reforms are analysed first from a functional perspective, focusing on revenue collection, pooling, purchasing and benefit entitlements. Subsequent chapters analyse particular financing reform topics including: financing of capital costs; links between reforms and the wider public finance system; financing of public health services; voluntary health insurance; informal payments; and accountability in financing institutions. Full text available for download at:
http://www.euro.who.int/__data/assets/pdf_file/0014/120164/E94240.pdf.

X. GENEVA ASSOCIATION PUBLICATIONS

The Geneva Papers on Risk and Insurance—Issues and Practice

Vol. 35, No. 3 / July 2010

ECONOMIC ISSUES IN LAW AND INSURANCE

- Editorial—Introduction, *by Alberto Monti*
- Guest Editorial—Lessons Learned from the History of Corporate Liability Insurance in the United States, *by Kenneth S. Abraham*
- The Government as Reinsurer of Catastrophe Risks?, *by Véronique Bruggeman, Michael G. Faure and Karine Fiore*
- Governing Ignorance: Emerging Catastrophic Risks—Industry Responses and Policy Frictions, *by Giuliano Castellano*
- The Winding Road to Industrial Safety: Evidence on the Effects of Environmental Liability on Accident Prevention in Germany, *by Reimund Schwarze and Onno Hoffmeister*

DEVELOPMENT OF INSURANCE MARKETS AND REGULATION

- Analysing Insurer Rating Transitions with Different Economic and Industry Cycles, *by Yuling Wang*
- Deregulation, Insurance Supervision and Guaranty Funds, *by Milton Nektarios*
- Derivative Hedging and Insurer Solvency: Evidence from Taiwan, *by Yung-Ming Shiu*

SPECIAL CONTRIBUTION

- The Geneva Risk and Insurance Review 2009: In Quest of Behavioural Insurance, *by J. François Outreville*

The Geneva Risk and Insurance Review

Vol. 35, No. 1 / June 2010

- Uncertainty in the Theory of Public Finance (2009 EGRIE Keynote address), *by Agnar Sandmo*
- Incentive Effects of Community Rating in Automobile Insurance: Evidence from Massachusetts Automobile Insurance, *by Sharon Tennyson*
- Insurance Market Effects of Risk Management Metrics, *by Carole Bernard and Weidong Tian*
- A note on risk aversion, prudence and portfolio insurance, *by Philippe Bertrand and Jean-Luc Prigent*

New Geneva Association Publication on

Key Financial Stability Issues in Insurance—An account of The Geneva Association's ongoing dialogue on systemic risk with regulators and policy-makers

A follow-up report on *Systemic Risk in Insurance—An analysis of insurance and financial stability,* published in March 2010.

After the publication of the first Systemic Risk in Insurance report, a number of follow-up questions and issues were identified and highlighted to The Geneva Association by national and international regulatory, supervisory and other special bodies concerned with insurance. Based on these questions and on a series of background papers and special presentations on systemic risk in insurance created between March and June 2010, this new report summarises the insurance industry's thoughts on areas including corporate activities and regulatory measures. It constitutes a further development of the analysis of the role of insurance for financial stability and represents an integral part of the industry's position on systemic risk in insurance as originally laid out in the March 2010 report.

To access the full report, please go to *http://www.genevaassociation.org/PDF/BookandMonographs/Geneva_Association_Key_Financial_Stability_Issues_in_Insurance_July2010.pdf*.

For the original March 2010 Systemic Risk in Insurance report, please go to: *http://www.genevaassociation.org/PDF/BookandMonographs/Geneva_Association_Systemic_Risk_in_Insurance_Report_March2010.pdf*.

XI. CONFERENCES ORGANISED AND/OR SPONSORED BY THE GENEVA ASSOCIATION

2010

September

27-28	São Paulo	**2nd CC+I Seminar on "Climate Change: Opportunities for Latin American Insurers?"**, hosted by Allianz Brazil

October

4-5	Madrid	**8th Meeting of The Geneva Association's Chief Communications Officers**, *(Chief Communication Officers only)* hosted by Caser Group and Sistema MAPFRE
12	Rome	**Italian AXA Forum on "Future, Finance, Trust, Facts. Challenges for financial and insurance industry between reality and perception"**, organised by AXA in Italy, ANIA and The Geneva Association
19-20	London	**7th Liability Regimes Conference on "Exploring Environmental Liability: An Open Flank for Insurers and their Clients"**, hosted by RSA Insurance

November

8-9	London	**1st MENA Insurance CEO Club on "How to set visions for the Middle Eastern and North African countries"**, co-organised by Asia Insurance Review and The Geneva Association
17	London	**5th Meeting of the Climate Change and Insurance Project of The Geneva Association** *(CC+I Working Group members only)*, hosted by Axis Re
18-19	Paris	**7th Health & Ageing Conference of The Geneva Association on "U.S. and French Long-term Care Insurance Markets Development"**, co-organised with Willis Re
24-25	Munich	**6th CRO Assembly on "A vision for risk management in the 'new normal' "**, jointly organised by The Geneva Association, Munich Re and CRO Forum

December

6-7	London	**7th International Insurance and Finance Seminar of The Geneva Association**, hosted by Prudential plc

2011

January

11	New York	**Joint Industry Forum for P&C Insurance Industry**, co-sponsored by The Geneva Association
16-18	Singapore	**1st Asian Climate Change Summit on "Tackling Climate Change—Being Ready to Face Threats & Opportunities"**, co-hosted by Asia Insurance Review and The Geneva Association

February

24-25	Innsbruck	**14th Joint Seminar of the European Association of Law and Economics (EALE) and The Geneva Association on "Law and Economics of Natural Hazard Management in a Changing Climate"**, jointly organised by the University of Innsbruck/Climate Services Center

March

21-23	Singapore	**11th Asia CEO Insurance Summit**, co-organised by Asia Insurance Review and The Geneva Association