



31 May - 03 June 2016
at
ISEG- Lisbon School of Economics
and Management

If you intend to submit a paper for the ASTIN COLLOQUIUM LISBOA 2016, you need to provide a **Synopsis** (using the template on the next page), complete this **Submission Form** and submit both to astincolloquium2016@gmail.com by **Saturday 7 May 2016**. Synopses and submission forms must be sent as MSWord attachments, please do not supply them in the body of an email. You will be advised of the outcome and, if accepted, your abstract will be uploaded to the website.

SUBMISSION FORM

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Title of Paper / Presentation / Session to appear in program:
Why Adverse Selection need not be adverse?

Author/s:

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2. Angus S. Macdonald

3. Pradip Tapadar

4. R. Guy Thomas

What will your final submission be? Presentation and Paper Presentation Only

If selected, what level of knowledge will delegates attending your session require? (please select only) one

No prior knowledge General industry knowledge assumed Technical/specific industry knowledge assumed

Note: If you are asked to present at ASTIN COLLOQUIUM LISBOA 2016, it will still be necessary for you to register and pay to attend the Colloquium. IAP does not subsidise, discount, pay for, or extend special registration offers for presenters or delegates.

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ABSTRACT

(TITLE OF PAPER / PRESENTATION TO APPEAR IN PROGRAM)

(Name of Author/s)

Key words: (enter up to 8 key words applicable to your abstract / paper / presentation)

Adverse selection; Loss coverage; Social welfare; Utility of wealth; Risk aversion; Insurance demand; Equilibrium.

Purpose of your paper: (To assist delegates / readers searching for your paper on the website after the event, please enter a brief description (maximum 220 characters) on the purpose of your paper.)

We investigate restricted risk classification in insurance markets and find that when a moderate degree of adverse selection is tolerated, more loss can be protected, thus increasing the social efficacy of insurance.

Abstract: (Place text here using font size Calibri (Body) 11)

Note: If you are not presenting a paper for this Colloquium, please include as much detail as possible in your Abstract (maximum three pages) to enable delegates to prepare for your session.

Restrictions on insurance risk classification can lead to troublesome adverse selection. A simple version of the usual argument is as follows. If insurers cannot charge risk differentiated premiums, more insurance is bought by higher risks and less insurance is bought by lower risks. This raises the equilibrium pooled price of insurance above a population-weighted average of true risk premiums. Also, since the number of higher risks is usually smaller than the number of lower risks, the total number of risks insured usually falls. This combination of a rise in price and fall in demand is usually portrayed as a bad outcome, both for insurers and for society.

However, some restrictions on insurance risk classification are common in practice. For example, since 2012 insurers in the European Union has been barred from using gender in underwriting; and many countries have placed some limits on insurers' use of genetic test results. We can observe that policymakers often appear to perceive some merit in such restrictions. This observation motivates a careful re-examination of the usual adverse selection argument.

In this talk, we study the implications of insurers not being allowed to use risk-differentiated premiums. We model the insurance purchasing behaviour of individuals based on their degrees of risk aversion and utility of wealth. We assume that an equilibrium has been reached, where insurers break even by charging the same 'pooled' premium to both high and low risks. We characterise this equilibrium by two quantities: adverse selection, defined as the correlation of insurance coverage and losses; and 'loss coverage', defined as the expected losses compensated by insurance.

We find that adverse selection is always higher under pooling than under risk-differentiated premiums, as expected. However, loss coverage can be higher or lower under pooling than under risk-differentiated premiums. Loss coverage is higher under pooling if the shift in coverage towards higher risks more than compensates for the fall in number of risks

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insured. In other words, loss coverage is higher under pooling if adverse selection at the equilibrium is modest, but lower under pooling if adverse selection at the equilibrium is severe.

Loss coverage represents the expected losses compensated by insurance for the whole population. We argue that this is a good metric for the social efficacy of insurance, and hence one which public policymakers may reasonably wish to maximise. If this argument is accepted, modest adverse selection under pooling can be a good thing, because it leads to higher loss coverage than risk-differentiated premiums.

References:

- Hao, M., Macdonald, A.S., Tapadar, P. & Thomas, R.G. (2015). Insurance loss coverage under restricted risk classification: The case of iso-elastic demand. Submitted.
- Macdonald, A.S. & Tapadar, P. (2010). Multifactorial disorders and adverse selection: epidemiology meets economics. *Journal of Risk and Insurance*, 77, 155-182.
- Thomas, R.G. (2008) Loss Coverage as a Public Policy Objective for Risk Classification Schemes. *The Journal of Risk and Insurance*, 75(4), 997-1018.
- Thomas, R.G. (2009) Demand Elasticity, Adverse Selection and Loss Coverage: When Can Community Rating Work? *ASTIN Bulletin*, 39(2), 403-428.

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