Proposal for Russell Ackoff Doctoral Student Award
for Research on Human Decision Processes and Risk Management Fall 2009

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Submitted by:
Joelle HY Fong (hfong@wharton.upenn.edu)
Applied Econ, Insurance & Risk Mgmt Dept
The Wharton School, Univ. of Pennsylvania, 3620 Locust Walk
St 3000 SH-DH, Philadelphia, PA 19104

Project title:

Longevity Risk and Compulsory Annuitization: Managing Asset Decumulation in Singapore

Project Summary:

A central concern in the debate over pension reform in defined-contribution (DC) systems is how plan participants should draw down their accumulated asset balances during retirement. Some proposals call for mandatory annuitization of retirement balances, while others advocate more flexible ways, either through lump-sum distributions or phased draw downs. Compulsory annuitization is often proposed as a compelling solution to help plan participants manage their longevity risk, since they often underestimate their own potential for a very long life after retirement.

The current reform being fashioned in the Singaporean national pension system – known as the Central Provident Fund (CPF) – clearly reflects the political will to switch to mandatory annuitization by 2013, ostensibly to correct for deficiencies under the current payout scheme.[1] Yet the relative attractiveness of compulsory annuitization depends critically on whether reasonably priced individual life annuities are available to participants. The goal of my research is to evaluate the pricing of alternative annuity policies, in order to assess whether plan participants might benefit from higher annuity returns per dollar premium and lower adverse selection costs under the new annuitization mandate. In particular, I plan to apply the "money's worth" valuation model in this study. The "money's worth" framework seeks to measure the appeal of annuities by calculating the expected present discounted value of annuity payments compared to the annuity premium paid (e.g. Mitchell et al. 1999).

[1] The current payout scheme operates on a regulated phased withdrawal basis. Payouts start at age 62, and typically last about 20 years depending on the accumulations in the retirement account. A span of 20 years is certainly adequate for an average Singaporean who expects to live to age 75 in 1990 but is not necessarily so for a Singaporean who expects to live to age 80.6 in 2008.

Public policy discussions on the new Singaporean scheme under development have generated substantial interest in the operation of annuity markets, in part due to the plan to introduce a new public annuity system that will operate alongside the existing private market. The idea of compulsory annuity is rather controversial, both in Singapore and other countries. Conflicting hypotheses have also emerged on whether adverse selection costs are lower in a compulsory annuitization setting. On the one hand, there may be less adverse selection since participants do not have choice as to whether they will annuitize, so insurers face a broader risk pool. On the other hand, the compulsory annuitant population will be less homogeneous than the voluntary annuitant population, possibly leading to greater adverse selection across product types within the compulsory market.

To date we have gathered data on population and annuitant mortality tables that will permit me to estimate survival probabilities in Singapore. We have also gathered information on annuity pricing and benefits, for alternative contract designs. We are in a position to implement our money's worth computations and will report these in a working paper to be presented at several conferences this summer. This study will be of substantial interest to policymakers, plan participants, and commercial insurers in Singapore, and it will also be relevant for other countries in the midst of reforming their pension system. To disseminate our findings before the insurance and risk management academy, I will present this research at the American Risk Insurance Association (ARIA) and the Annual Australian Superannuation Conference in Sydney during the Summer of 2009. My advisor has spoken at these meetings and recommends that I present to these international audiences to obtain feedback.

Name of advisor:

Olivia S. Mitchell
International Foundation of Employee Benefit Plans Professor
Dept Chair and Professor of Insurance & Risk Mgmt.
The Wharton School, Univ. of Pennsylvania, 3620 Locust Walk
St 3000 SH-DH, Philadelphia, PA 19104
T: 215-898-0424

I approve the submission of this proposal.

OSMitchell

Olivia S. Mitchell