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SYNOPSIS

POST RETIREMENT FUNDING IN AUSTRALIA
LIWMPC Retirement Incomes Working Group

Key words:
Annuities, pensions, retirement income, post retirement needs

Purpose of your paper:
The Institute's Retirement Incomes Working Group is producing a survey of the needs of retirees for alternative financial products and strategies in order to assist in the development of this market.

Synopsis:
The Institute's Retirement Incomes Working Group has been set up to address what the Actuaries Institute has identified as one of its major policy objectives: "the pressing need to develop a more vibrant annuities market". It is certainly an area of actuarial expertise (where the profession can add value to the policy debate on the development of the annuity market and other products and strategies that sharpen the focus on the issues annuities seek to address wherever they arise) and where actuaries could in the future find employment.

The Institute's Retirement Incomes Working Group has been set up to address what the Actuaries Institute has identified as one of its major policy objectives: "the pressing need to develop a more vibrant annuities market".[1] It is certainly an area of actuarial expertise (where the profession can add value to the policy debate on the development of the annuity market and other products and strategies that sharpen the focus on the issues annuities seek to address wherever they arise) and where actuaries could in the future find employment.

As a first step, this paper is a survey of:

- the needs of Australian retirees for financial products and services;
- how they are currently met;
- the retirement incomes products and services that are currently available locally and internationally;
- the obstacles to the greater use of more appropriate products in Australia

[1] See http://www.actuaries.asn.au/Library/Submissions/MediaRelease/2012/Press%20Release%20-%202012%20Federal%20Budget_FINAL.pdf

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SYNOPSIS

"DEVELOPING EQUITY RELEASE MARKETS: RISK ANALYSIS FOR REVERSE MORTGAGE AND HOME REVERSION"

Daniel Alai, Hua Chen, Daniel Cho, Katja Hanewald, Michael Sherris

Key words:
Reverse Mortgage, Home Reversion, Risk-Based Capital

Purpose of your paper:
This paper contributes to the development of equity release products by comparing the cash flows and risk profiles of reverse mortgage and home reversion plans.

Synopsis:
Home equity release products allow retirees to convert a previously illiquid asset into cash payments which can be used for home improvements, regular income, debt repayment, aged care and medical treatments as well as a range of other uses which improve quality of life for retirees. There has been a growing literature addressing risk factors and capital adequacy of reverse mortgage products in recent years, including but not limited to, Boehm and Ehrhardt (1994), Chinloy and Megbolugbe (1994), Szymanoski (1994), Rodda et al. (2004), Ma and Deng (2006), Wang et al. (2007), Chen et al. (2010), Sherris and Sun (2010), and Li et al. (2010). However, little research has been done on the risk analysis of other equity release products, such as home reversion contracts. The purpose of this paper is to introduce home reversion schemes to the readers and compare the cash flows and risk profile from the provider's perspective between reverse mortgage and home reversion contracts. A Markovian multi-state model is employed to calculate termination rates, and a vector autoregression model (VAR) is used to model the joint dynamics of other economic variables. We then derive stochastic discount factors based on an affine term structure model and price the no negative equity guarantee in the reverse mortgage and the lease for life contract in the home reversion plan accordingly. We obtain the empirical distribution of risk-based capital via simulation and calculate the minimal capital requirement based on the VaR approach.

In a reverse mortgage contract, the provider lends the customer cash and obtains a mortgage charge over the customer's property (or a share of the property). The contract is terminated upon the death or permanent moveout of the customer, at which time the property is sold and the proceeds are used to repay the outstanding loan. Typically, a no negative equity guarantee (NNEG) is included in the contact, which stipulates that the customer is not liable in case the proceeds of the property sale are insufficient to repay the loan.

In a home reversion contract, the provider purchases the ownership right over the customer's property (or a share of the property). The home is sold at discount (typically between 35% and 60% of the market price), and the contract includes a lease for life agreement that stipulates that the customer may continue to inhabit the property until death or permanent moveout. There are two main types of home reversion schemes – a sale and lease model and a sale and mortgage model. In the sale and lease model, the title to the property passes to the provider at the time of purchase and the property is leased back to the consumer at a nominal rent. In the sale and mortgage model, the title to the property remains in the consumer's name even after the provider pays. To protect the provider's interest in the property, the consumer is required to give the provider a mortgage over the

property (ASIC, 2005). We focus on the sale and lease home reversion in this paper due to its popularity and simplicity in property rights.

The untouched research area of home reversion, particularly in the United States, is partly due to the underdeveloped market. In the US, reverse mortgage products dominate the home equity release market. Home Equity Conversion Mortgage (HECM) is considered the safest and the most popular program of its kind in the US, since it is insured by the US federal government, and accounts for 95% of the market (Ma and Deng, 2006). The dominance of a single equity release product in the US stands in stark contrast to the dynamics of some foreign markets. In the UK, for example, reverse mortgages, home reversion and other equity release products have been available for between 10 and 30 years. Among them, reverse mortgage accounts for 75% of the equity release products available in the market while home aversion accounts for most of the remaining 25% (ASIC 2005). Home reversion schemes are available in Australia but the market is still very small. The only provider is Homesafe Solutions Pty Ltd and contracts are only available for certain areas of Sydney and Melbourne (SEQUAL, 2012).

Oliver Wyman Financial Services (2005) predicted "though equity solutions have traditionally fared poorly in the US, options such as home reversion products should find a market – especially among owners of higher-value homes, for whom equity release may be intended to diversify a portfolio rather than to free up cash". In addition, reverse mortgages involve the accumulation of debt over the life of the contract while home reversion is debt-free. Under a reverse mortgage contract, senior homeowners bear various risks, including longevity risk, interest rate risk and property value risk. Nevertheless, these risks are remitted to the provider with the transfer of the title under a home reversion. This make a substantial difference since commercial providers are generally better positioned to bear such risks and they can also transfer risks to the capital market more efficiently compared with senior homeowners. More importantly, the interests of investors and consumers are aligned under home reversion schemes: both want the value of the home to rise (Oliver Wyman Financial Services, 2005). Therefore, we believe that there remains room for significant growth of diversified equity release markets in the US and in Australia and we see a great potential for the development of home reversion products.

We compare the cash flows and risk profiles of reverse mortgage and home reversion plans based on models that are calibrated using Australian market data. The Markov multi-state model employed to calculate contract termination rates is calibrated to mortality data for Australian females from the Human Mortality Database and assuming additional parameters from a previous study by Ji et al. (2012). The VAR economic model is estimated using quarterly data of zero-coupon interest rates, a Sydney house price index and rental index and a time series for Sydney GDP over the period June 1993 to June 2011. Variable mortgage rates are modeled by adding a fixed margin to short rates. From the VAR model, stochastic discount factors are derived and then used to value the no negative equity guarantee typically included in reverse mortgage contracts and the lease for life agreement in the home reversion plans.

The two products, reverse mortgage and home reversion, are compared by analysing the provider's net present value of cash flows and the corresponding probability distributions. We present results for different borrower ages and different loan-to-value ratios/home reversion percentages. Our results suggest that both products are relatively risk-free from the provider's perspective for loan-to-value ratios (and corresponding home reversion percentages) in the range currently found in the Australian market. However, assuming higher loan-to-value ratios as we see them in the US market we find that home reversion plans are potentially less profitable then reverse mortgages and also bear higher

risks. Our findings suggest that providers need to assess risks carefully in these new products and that capital requirements would differ for home reversion plans and reverse mortgages.

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SYNOPSIS

"EQUITY RELEASE PRODUCTS: PRODUCT DESIGN, PRICING AND RISK ANALYSIS"

Daniel Cho, Katja Hanewald

Key words:
Reverse Mortgage, Home Reversion, Risk-Based Capital, Payout Design

Purpose of your paper:
This presentation addresses the product design, pricing and risk analysis of equity release products. We consider reverse mortgage with different payout designs and compare reverse mortgages with home reversion plans.

Synopsis:
Home equity release products allow retirees to convert their illiquid home equity into cash payments to finance a regular income, debt repayment, home improvements, aged care and medical treatments. There has been a growing academic literature addressing risk factors and capital adequacy of reverse mortgage products in recent years. However, little research has been done on the pricing and risk analysis of reverse mortgages with different payout designs and on other equity release products such as home reversion contracts.

Our presentation introduces reverse mortgage contracts with different payout options (lump sum, constant income stream, inflation-indexed income stream) and home reversion schemes to the audience. The findings of two UNSW research projects on equity release products are summarized (Alai et al., 2013; Cho et al., 2013). We show how to model the cash flows and risk profiles from the provider's perspective and provide numerical examples based on Australian data. Our research contributes to the development of the Australian equity release market, which is currently dominated by lump-sum reverse mortgages. Although there is room for significant growth of a diversified equity release market in Australia, with great potential for the development of income stream reverse mortgages and home reversion products, the pricing and solvency of these products requires analysis by providers and regulators. This session provides this analysis and will be of interest to actuaries, regulators and other practitioners who wish to understand this developing market.

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SYNOPSIS

RISK MANAGEMENT IN SUPER

Darren Whickham - Super Risk Management and FCR Task Force

Key words:
Superannuation Risk Management, Financial Condition Reports, Stress Tests

Purpose of your paper:
To provide an update on FCRs for Super funds, Prudential Standards in Superannuation and the results of a [to be confirmed] survey on risk management

Synopsis:
To provide an update on FCRs for Super funds, Prudential Standards in Superannuation and the results of a [to be confirmed] survey on risk management