

Intervention of the State in UK's Equity Release Market

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- Housing Equity Withdrawal and Pension Adequacy
- Call for Proposals
VP/2014/014 – Promoting the Contribution of Private Savings to Pension Adequacy
- 6 European Universities



Research Background & Motivation

- Sustainability of existing pension systems
- Promotion of private pension schemes and savings for retirement
- Ongoing debate on using housing equity for retirement funding

The Telegraph

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Equity Release | Long & Short Term Care | Funeral Plans

Financial Services > Retirement Solutions > Equity Release

True cost of being a pensioner: is equity release a lifeline?

12 MAY 2017 • 10:31AM

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Using home to fund retirement is a delusion, says former minister

By Brian Milligan
Personal Finance reporter

15 July 2016 | Business

FT ADVISER

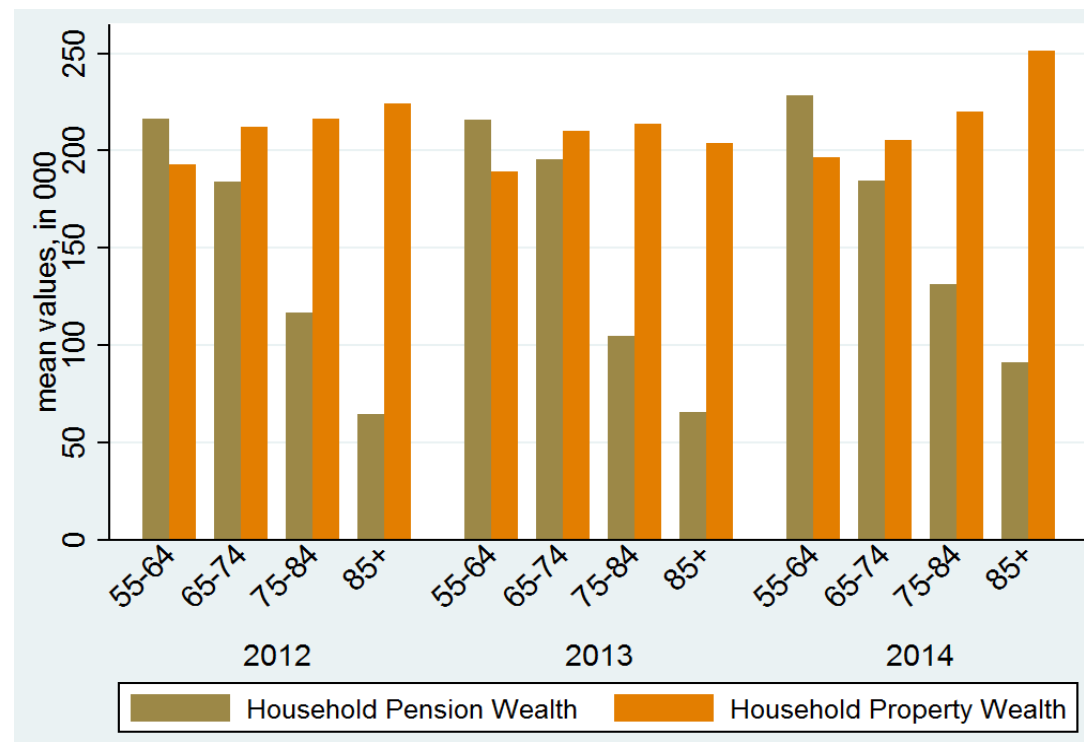
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Mortgages March 14, 2017

Housing wealth 'crucial' to retirees

Research Background & Motivation

- 76% of older households own their own homes
- More than 2/3 of 65+ are homeowners without a mortgage
- High house prices, particularly in South East



Pension wealth vs property wealth for homeowners aged 55 years and above.

Source: Wealth and Asset Survey, ONS



Housing Equity Withdrawal (HEW)

Remortgaging

Downsizing

Equity Release

Equity Release Schemes (ERS):

“They are financial products that allow individuals aged 55 years and above to release money from the property they live in without having to make any monthly repayments. The contract terminates upon the death or permanent move-out of the customer.” (The Equity Release Council)

Main Points

- Recognised to have great potential to support people's needs in retirement
- UK market – 0.5% of the entire mortgage market
- Dominant product – Lifetime mortgage (loan model) vs Home Reversion (sale model)
- Lifetime Mortgage (recognised by ERC) –
 - Fixed or cap rate of interest
 - Guarantee the right to tenure without regular repayments being required
 - No Negative Equity Guarantee (NNEG)

Actions Required

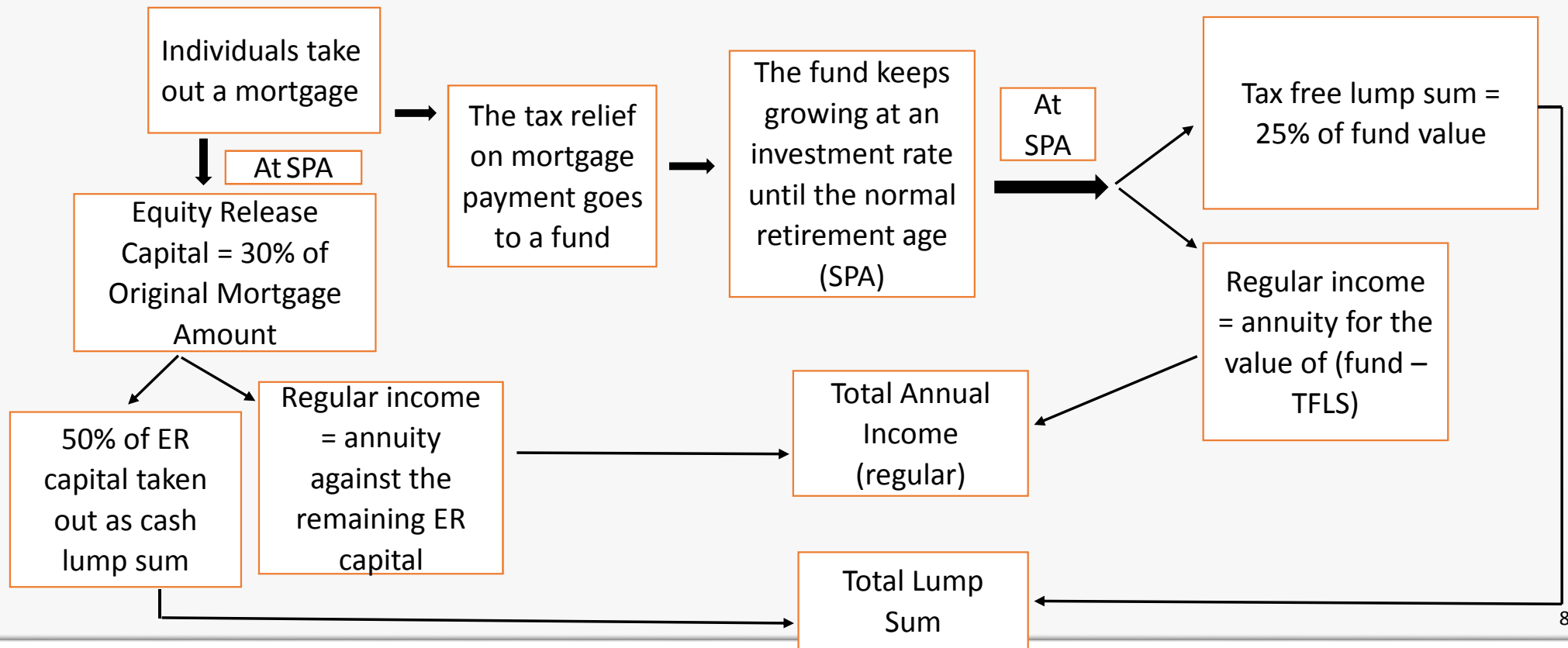
- (-) Barriers
 - Loan to Value Ratio (LTV)
 - Over-regulation
 - 'Market is neither competitive nor innovative' (FCA)
 - Shortage of financial advisers
 - Reputation, product knowledge and trust
- (+) Better pricing techniques, product innovation and increased competition
- (+) Role of the government

"From a regulator's perspective - are there barriers to competition or even missing markets? We believe there is a debate to be had about what products, markets could exist, and whether more entrants and innovation here might benefit consumers with greater choice and improved products."

Christopher Woolard, Director of Strategy & Competition, FCA 07/09/2015.

State Intervention + Hybrid Product

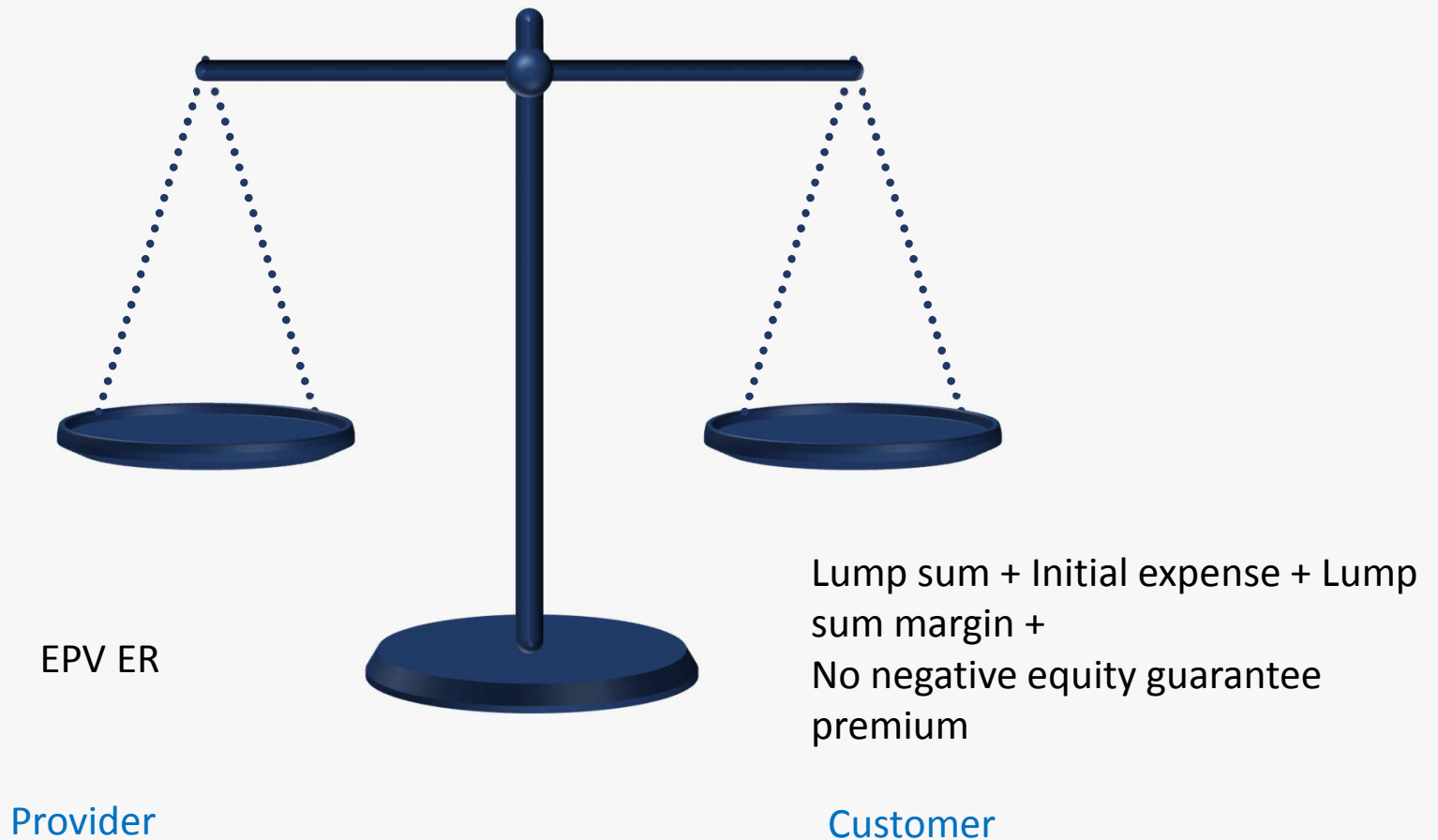
The State provides tax relief on mortgage repayments



Assumptions			
Mortgage interest rate	4.25%	Initial expense	30%
Investment Return	5.00%	Annual expense	5%
ER roll up Interest rate	5.50%	Tax Relief	20%
Annuity interest rate	3.00%	TFLS %	25%
Inflation	0.00%	ER LS %	50%
Lump sum expense	5.00%	ER capital %	30%
Gender/Age	M/25	Retirement Age	68
Illustration			
Mortgage term/value	30 / £200 k	Expected Life from retirement	17.73
Mortgage Repayment (annual)	£11,673	Retirement Fund	£299 k
Tax-Free Lump Sum	£75 k	Pension Income	£15.6 k
Equity Release Capital	£60 k	Accumulated ER Loan	£163 k
Equity Release (Tax-Free Lump Sum)	£30 k	Equity Release (Annual Income)	£2,086

Acknowledgement: Neil McConville FIA, Queen's University Belfast

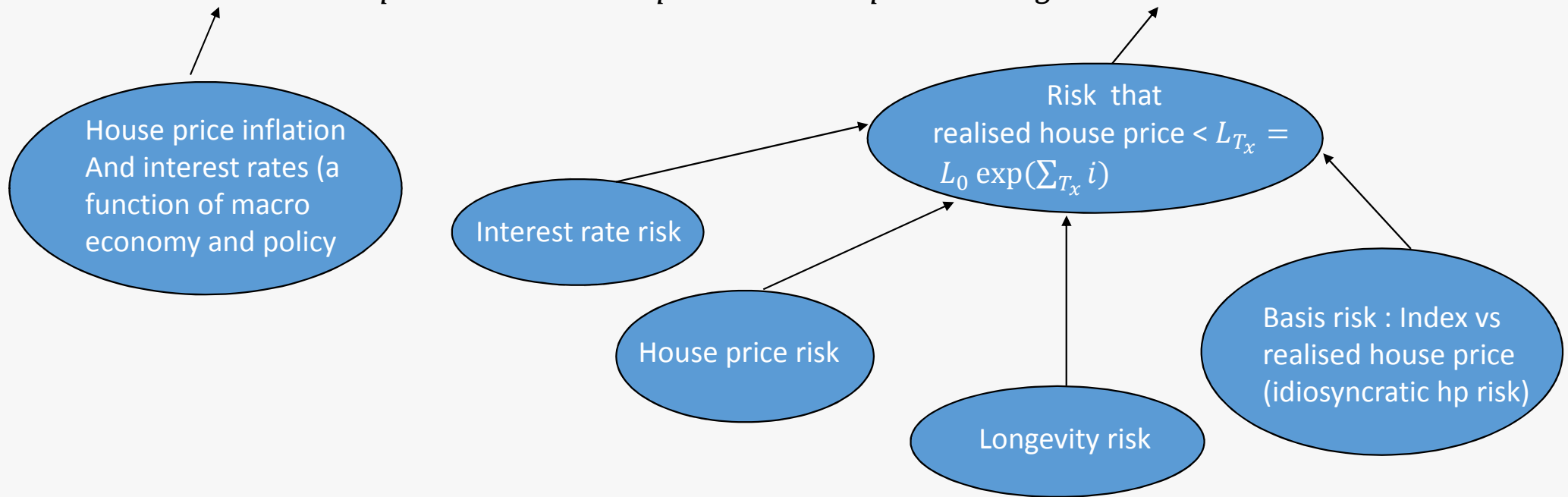
Equation of Value : Lump sum



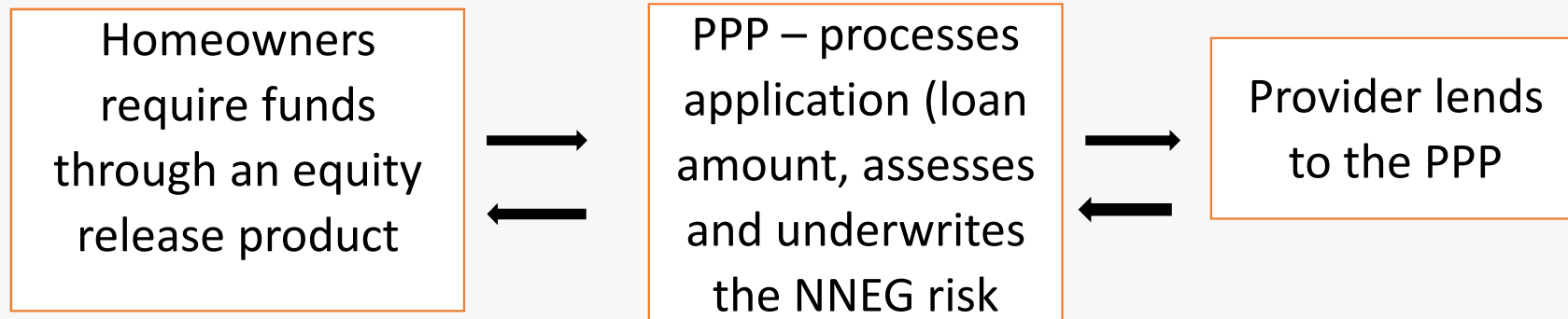
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Equation of Value : Lump sum

$$EPV = \text{Lump sum} + \text{Initial expenses} + \text{Lump sum margin} + NNEG$$



Theoretical Framework



- Framework (Andrews and Oberoi, 2014)
- PPP: Public-Private Partnership
- Lender: Pension funds, insurance companies
- Variable rate: Borrower pays a charge which is linked to a regional house price inflation index (HPI).
- If $L_0 = £100,000$ and if property prices in region rise by 2% over the year consumer owes £102,000 at year end ; if prices fall by 2% consumer owes £98,000. What the consumer owes fluctuates with the HPI.

Methodology

- Shao et al. (2015): A reverse mortgage (lifetime mortgage) pricing framework allowing for idiosyncratic house price risk and longevity risk
- Pricing Framework

Accumulated Loan Value at Termination: $L_{T_x} = L_0 \exp(\sum_{T_x} i)$

$i = \text{risk free rate (zero coupon bond yields)} + \text{lending margin} + \text{mortgage insurance premium rate}(\pi)$

$$Loss_{T_x} = \max\{L_{T_x} - (1 - c)H_{T_x}, 0\}$$

$$NNEG = \sum E(Loss)$$

$$Shortfall = NNEG - MIP$$

$$Value\ at\ Risk\ (VaR) = \text{Tail value of shortfall}_{95\%}$$

House Price Risk : Hybrid Hedonic Repeat Sales House Price Model (Shao et al., 2015)

Value of house (V_{it}) = Quality measure \times House price index

$$V_{it} = \alpha + \beta_t + X'\gamma + X'\Delta_t + \eta_i + \xi_{it}$$

Differencing the equation $V_{jt} - V_{js} = D'\beta + X'\Delta D + \xi_{jt} - \xi_{js}$

- β : Coefficients for time dummy variables
- γ : Coefficients for house characteristics variables X
- Δ : Coefficients for the interactions between time dummy and house characteristics variables
- η_i : Individual house specific error, uncorrelated with ξ
- D : Differenced time dummy variables

- **Generating Economic Scenarios : VAR(2)**

$$Y_t = k + \Phi_1 Y_{t-1} + \Phi_2 Y_{t-2} + \Sigma^{1/2} Z_t$$

5 State Variables :

- a.) one-quarter zero-coupon bond yields
- b.) Spread over 5 years
- c.) GDP growth rates
- d.) Average HPI growth rates
- e.) Rental yields

Vector of independent standard normal variables

- Risk adjusted stochastic discount factors (Alai et al., 2014)
- Projection of individual house prices : VARX(1,0) model
- Stochastic Mortality: Lee and Carter (1992)

Emerging Issues

- (?) Estimate the impact of government intervention (GI) on LTV within this set up – geographical variations
- (?) Estimate the impact of GI on economic capital – effect on VAR
- (?) How is this model going to take care of the problem of restructuring of lifetime mortgages under Solvency II