13th Global Conference of Actuaries 2011

Emerging Risks… Daring Solutions

Economic Capital and Financial Risk Management

Pradip Tapadar

Lecturer – University of Kent

UK

February 20 – 22, 2011

Agenda

1. Introduction
2. Definition of Economic Capital
3. Stochastic Model
4. Economic Capital Examples
    - Capital Repayment Mortgage
    - Lifetime Mortgage
    - Life Insurance Annuity
5. Risk Management Applications
    - Asset Allocation Strategies
    - Diversification Benefits for a Conglomerate
6. Conclusions

Introduction

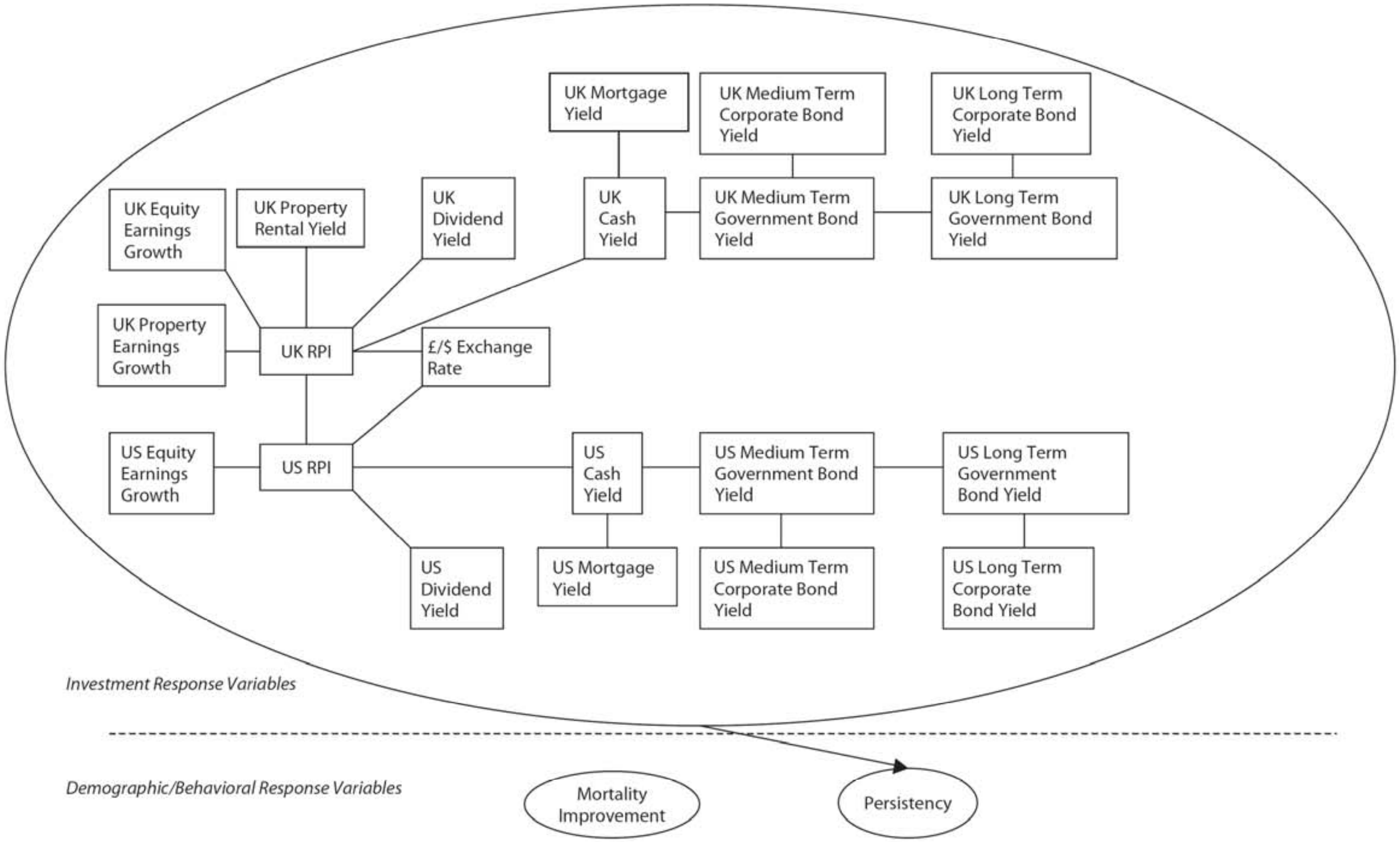
- Financial services firms are in the business of accepting risk.
- Sound financial management needs to be based on:
  - Appropriate managerial action.
  - Adequate risk-based capital backing.
- History and developments:
  - Fall of Equitable Life.
  - Financial Crisis of 2007.
  - Basel 2 and 3 & Solvency 2.
- Economic Capital provides a consistent financial risk management approach bringing uniformity across the financial services industry.

Economic Capital - Definition

Economic capital
… is the amount of capital required
… to ensure that the market value
… balance sheet of the firm remains solvent,
… over a specified time horizon,
… with a prescribed high probability.

Stochastic Model

Figure 1: Graphical Model of Economic and Demographic Variables

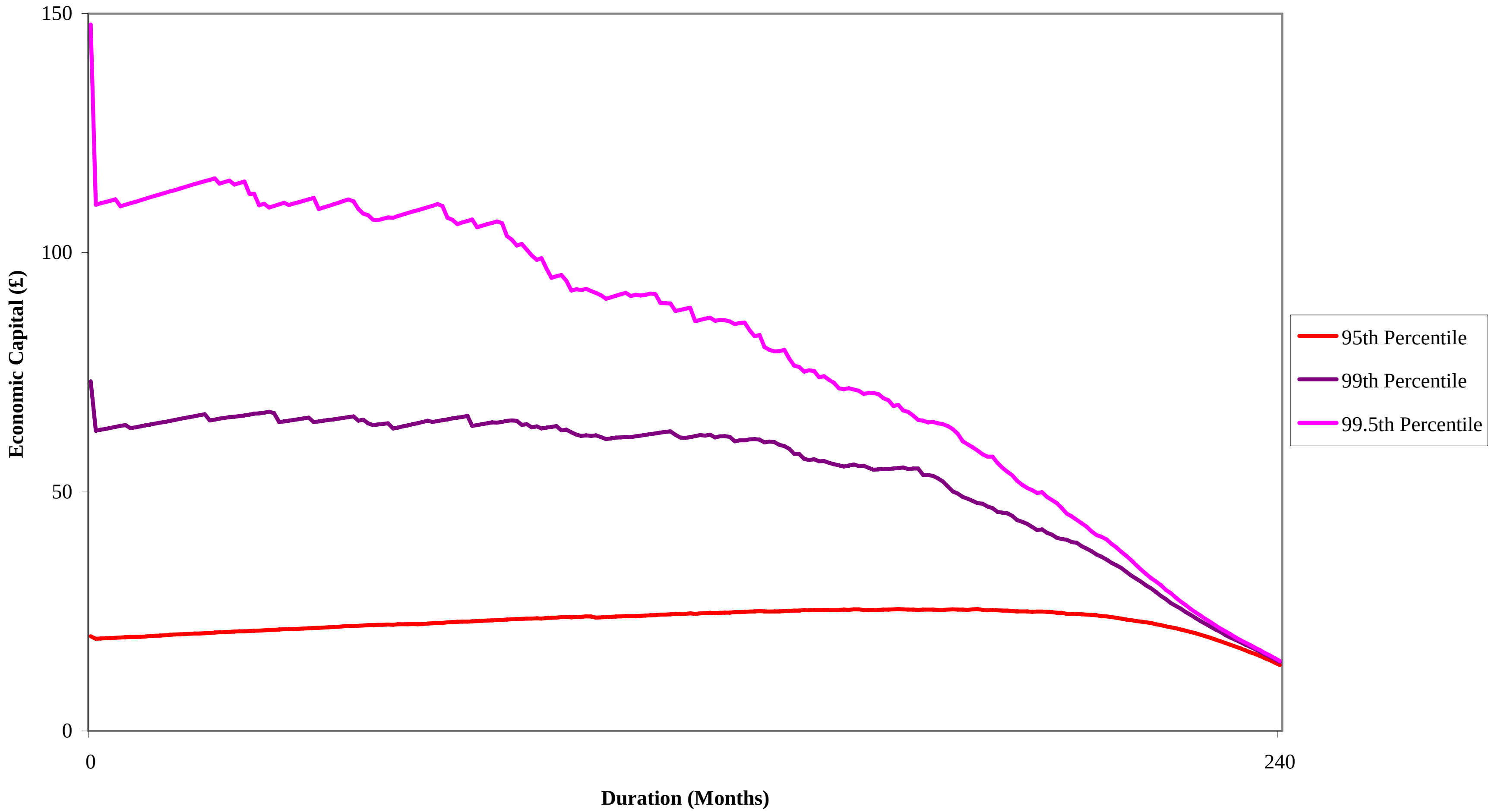


Capital Repayment Mortgage Example

Loan £100,000 for 20 years.

Mortgage yield of 5.75% and Cost of funding 4.85%.

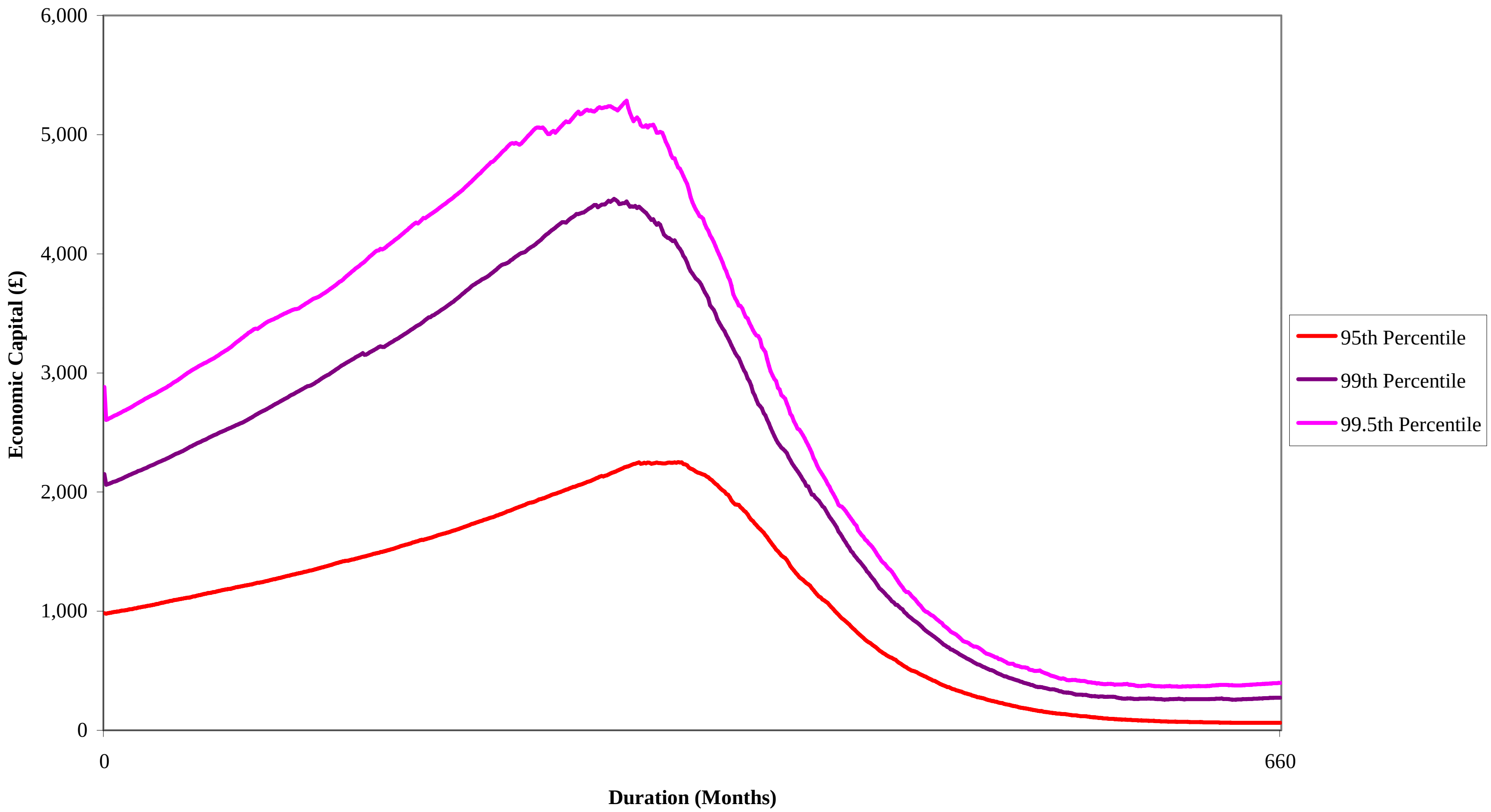
Figure 2: Capital Repayment Mortgage Economic Capital.



Lifetime Mortgage Example

Loan of £125,000 against a property worth £250,000.
Sold to a couple aged 65.
Fixed interest of 6.5% and Cost of funding 5.5%.

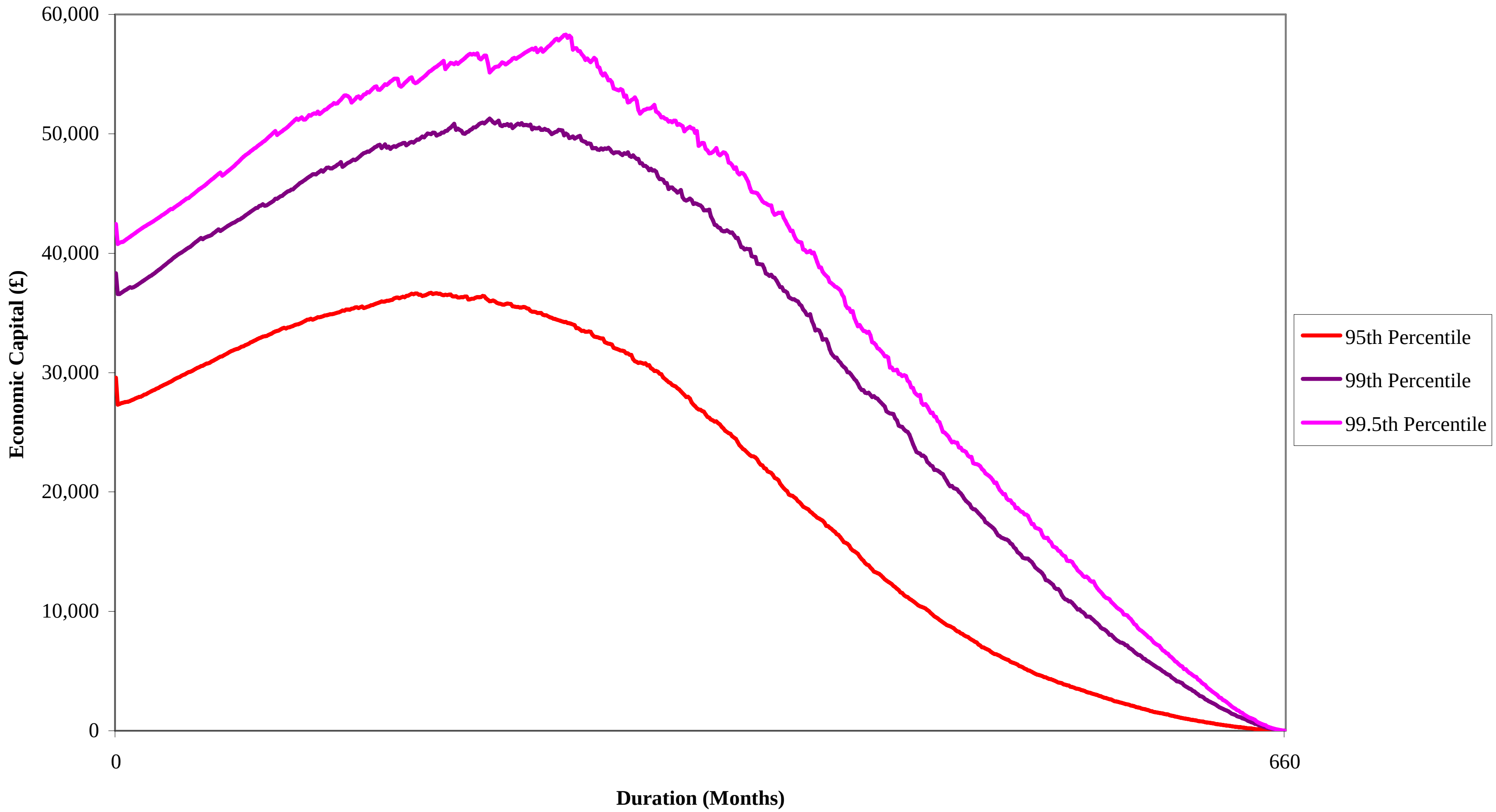
Figure 3: Lifetime Mortgage Economic Capital.



Life Insurance Annuity Example

Single premium £250,000 invested in long-term UK corporate bonds.
Joint life last survivor annuity of £1,500 per month for a couple aged 65.

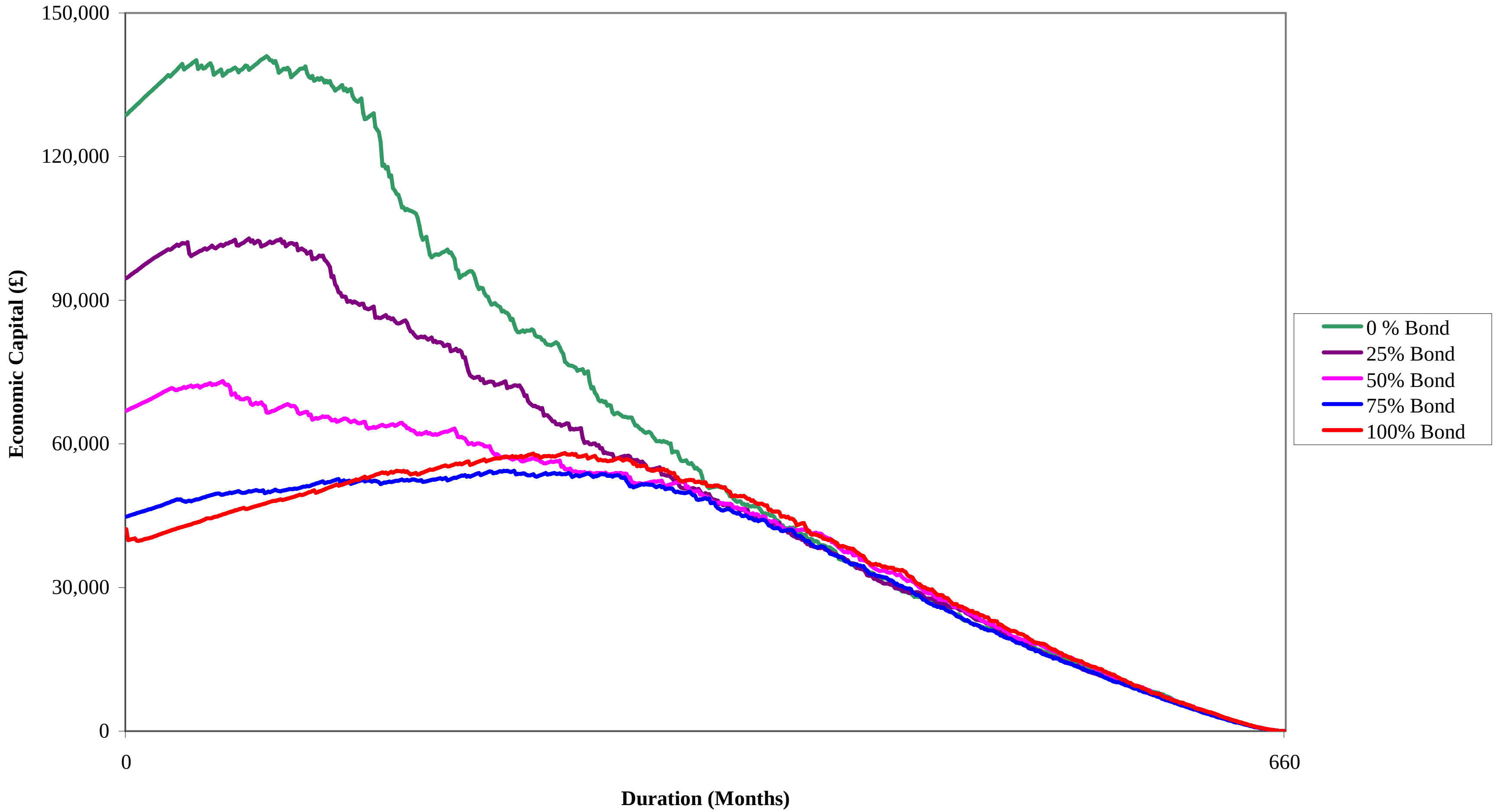
Figure 4: Life Insurance Annuity Economic Capital.



Asset Allocation Strategies & Economic Capital

Premium invested in long-term UK corporate bonds and UK equities.

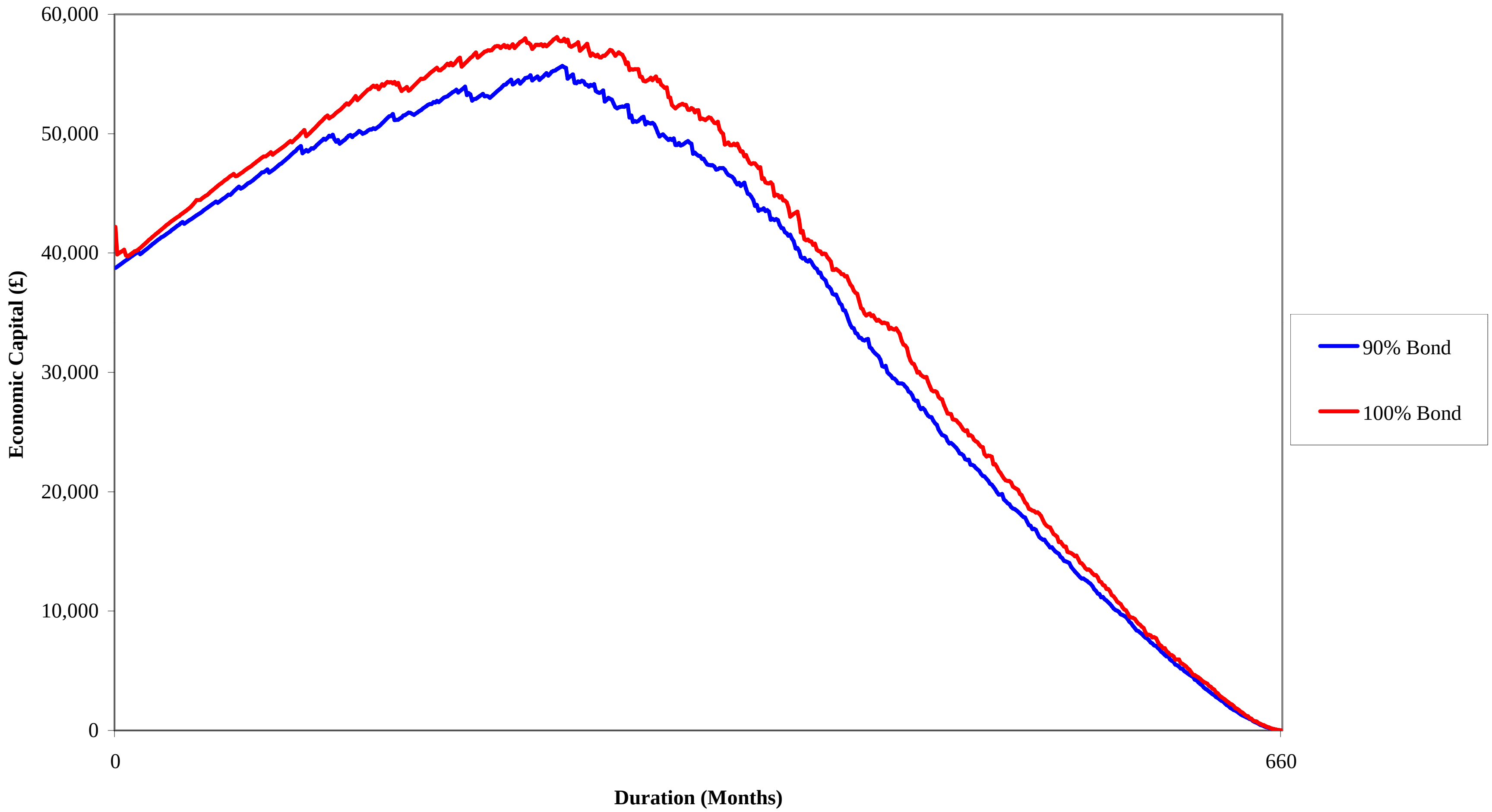
Figure 5: Impact of Asset Allocation on 99.5th percentile Economic Capital.



Asset Allocation Strategies & Economic Capital

Premium invested in long-term UK corporate bonds and UK equities.

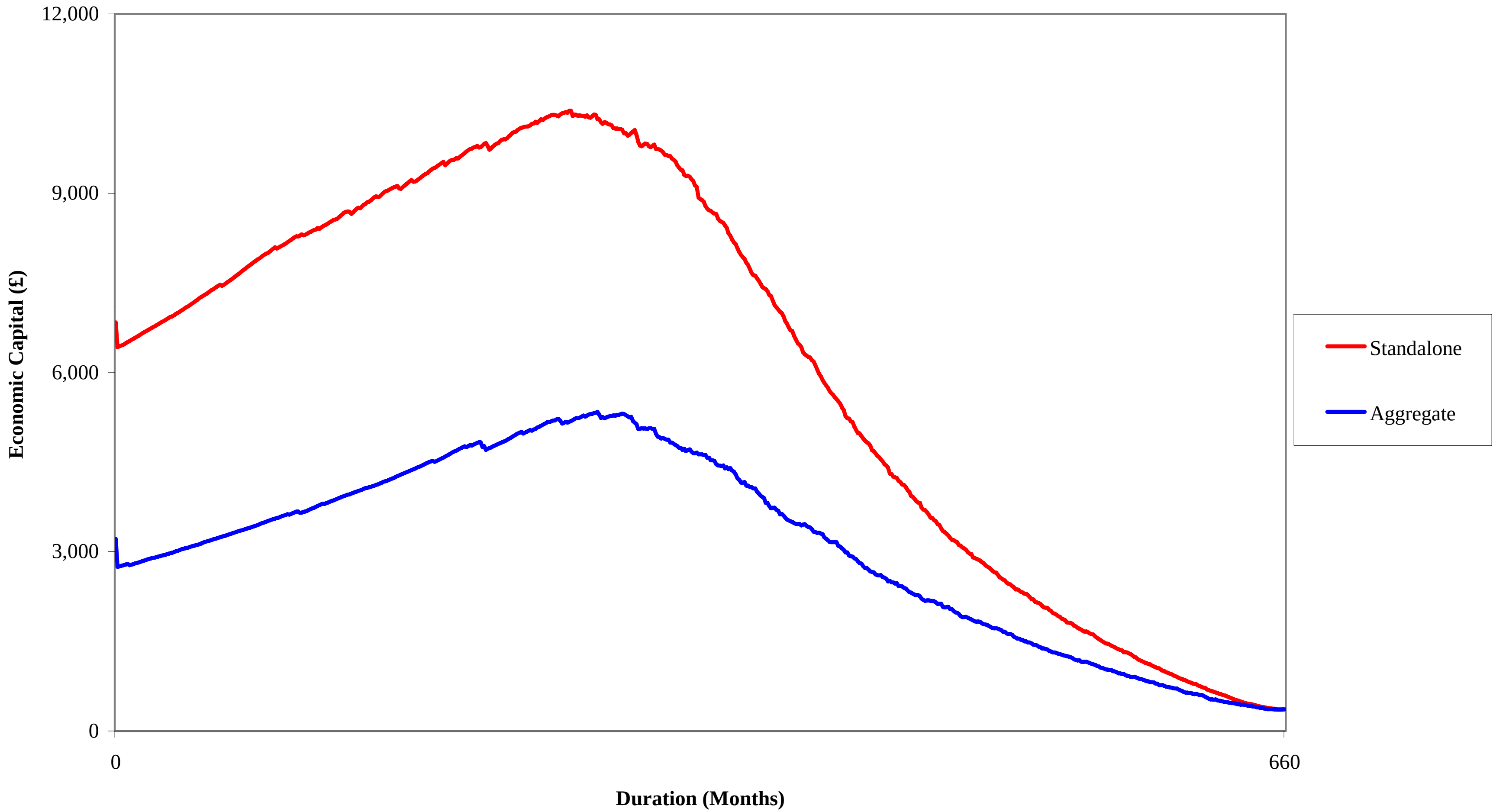
Figure 5b: Impact of Asset Allocation on 99.5th percentile Economic Capital.



Economic Capital of a Conglomerate

Business Mix: 90% Lifetime mortgage and 10% Annuity

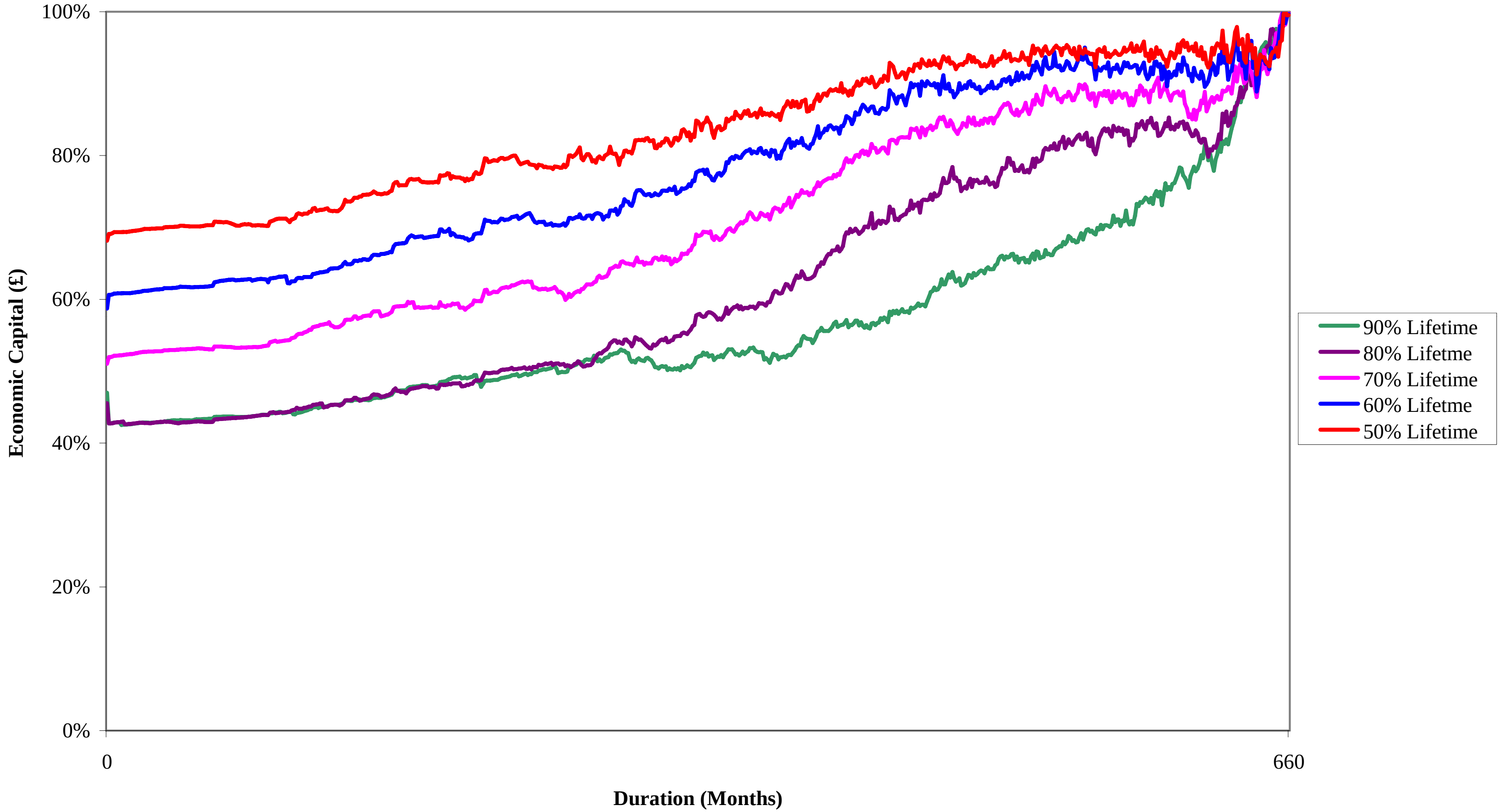
Figure 6: Conglomerate example: Standalone versus Aggregate Economic Capital.



Economic Capital of a Conglomerate

Varying business mixes of lifetime mortgage and annuity contracts.

Figure 6b: Conglomerate example: Aggregate economic capital as a percentage of standalone economic capital.



Conclusions

- Regulatory change is the driver for improvements all round.
- Economic capital provides a common risk currency across the whole financial services sector.
- Optimal asset allocation strategies to minimise economic capital involve allocating assets to equities.
- Economic capital provides a suitable approach for quantification of diversification benefits.
- Satisfies the needs of various interested parties.
- Economic capital has the potential to unify the whole financial services industry and bring the entire sector under an overarching umbrella.

References

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