



SOCIETY OF ACTUARIES

U.S. GAAP & IFRS: Today and Tomorrow
Sept. 13-14, 2010

New York

Profit Profiles (SOA Research Project)

[Thomas Herget](#)

Society of Actuaries' Liability Modeling Project

IASB's *Insurance Contracts* Exposure Draft

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September 14, 2010



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SOA Study – Overview

- Requested by American Academy of Actuaries for their response to IASB
- Sponsored by Financial Reporting Section to provide valuable research to its members
- To be completed October 2010
- 10 companies
- 15 submissions
- Probably 100 page report
- To be available on SOA website
 - www.soa.org/research/research-life.aspx



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SOA Study – Process



- Project Manager, PricewaterhouseCoopers
- Sam Gutterman, Randy Tillis, Steve Barclay
- Explicit Instructions
- Spreadsheet Template
- Conference Calls for Instructions and Questions
- Calculations by Actuarial Task Forces
- Review by PwC
- Overview by Section's Project Oversight Group
- Preparation of draft then final report
- Webcast



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SOA Study – Products



- Traditional Life (Term)
- Traditional Life (Participating)
- Universal Life (UL), with and w/o Guarantees
- Single Premium Fixed Deferred Annuity (SPDA)
- Variable Deferred Annuity with and w/o Guar's
- Single Premium Immediate Annuity (SPIA)
- Long-term Care (LTC)
- Supplemental Health (Medical)
- Equity Indexed Annuity



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SOA Study – Deliverables

- New Business Only (one year's issues)
- US GAAP – Balance Sheet and Income Statement
- IFRS – Balance Sheet and Income Statement
- Alternative Scenarios
- Observations



Variations Requested

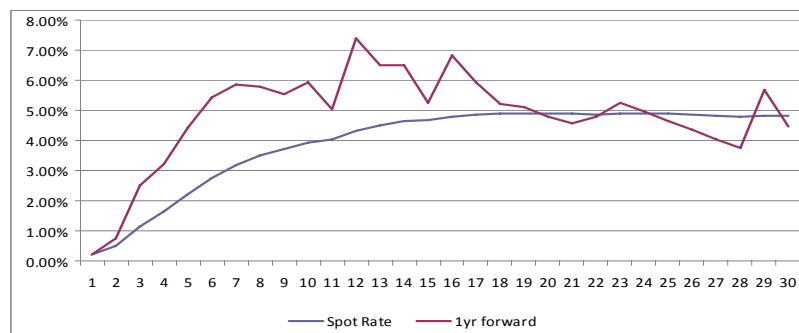
- Include/exclude acquisition costs
- Composite margin
- Investment / Discount rate
- Change in estimate after issue
- Change in experience after issue
- Alternative levels of RA (200% of CofC)
- Alternative RA methods



Discount Rates

- Risk-Free Rates
- Illiquidity Premium
- Par WL uses investment earned rate

Risk-Free Discount Rates



Illiquidity Adjustment to Discount Rates



- .73 basis points for SPIA
- .37 basis points for all other products

- Not an adjustment for “own credit risk” or “non-performance”



Risk Adjustment Choices



- Confidence Interval (CI)
- Conditional Tail Expectation (CTE)
- Cost of Capital (C of C)

- We used C of C



Risk Adjustment – Cost of Capital Calculation



Risk Adjustment liability equals

Present Value of
Cost of Capital rate x capital needed in year t

Where

PV uses discount rate from the scenario,
Cost of capital rate is 6%, and
Capital need in year t comes from factors on next slide



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Risk Adjustment Capital Factors



Fixed Annuity and Immediate Annuity: 2.3% of Account Value plus 6.16% of premium

Par WL and UL: 2.3% of claims plus 1.8% of face amount plus 6.16% of premium

Term life: 1.8% of face plus 6.16% of premium

Supplemental Health: 10% of claims plus 8.54% of premium

Long Term Care: 15.4% of Claims plus 47.74% of premiums



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Risk Adjustment Calibration

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Risk Management

- The Base Line used 100% of ACL of U.S. RBC which represents an estimate of economic capital
- For perspective,
 - Most companies are at 300 to 750%
 - An A company is 300%
 - Company action is required at 100%
- But remember, we don't incorporate economic cost of investments and financial risk (credit risk and ALM), which regulatory capital does include
- Remeasured each period



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Residual Margin

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Risk Management

- Amount needed to avoid profit at issue
- Amortized by ratio of PV expected benefits at time t divided by PV expected benefits at issue
- Discount rate – the one used at issue



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Composite Margin

- Not for IASB but for FASB
- Corresponds to Risk Adjustment plus Residual Margin
- Static amortization without interest accretion

Other Basic Assumptions

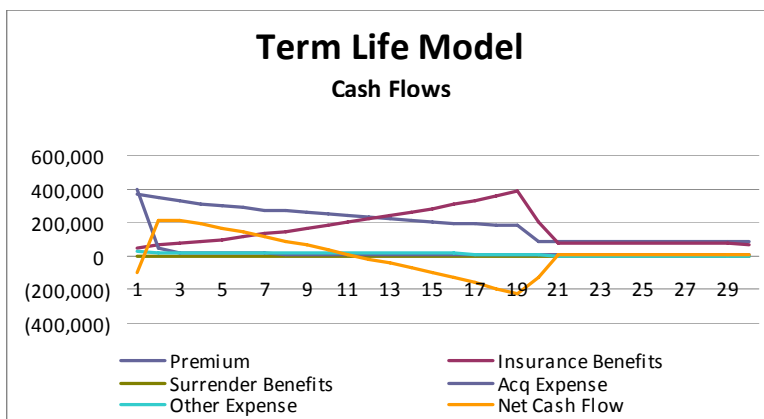
- Investment Income – Based on GAAP Net Assets
- Investment Earned Rate – based on ATF pricing assumptions
- Pre-tax
- Earnings paid out as Shareholder Dividend Annually

Term Life Product

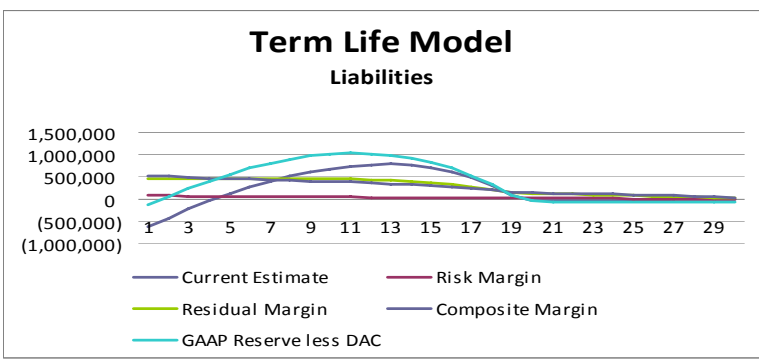
- 20 Year Level Term with ART Rates Starting Year 21
- One year's issues
- No reinsurance



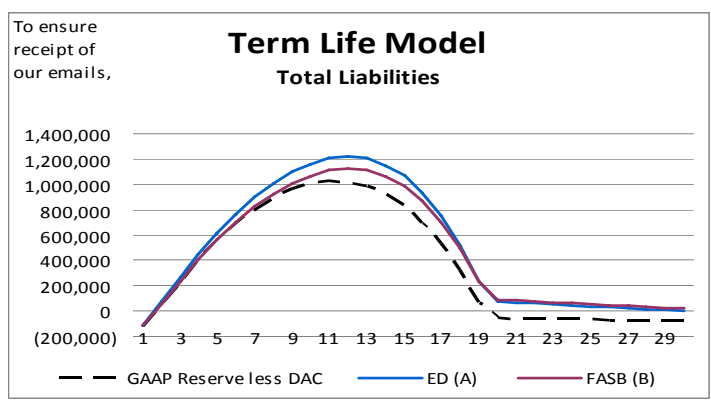
Term Life – Cash Flows



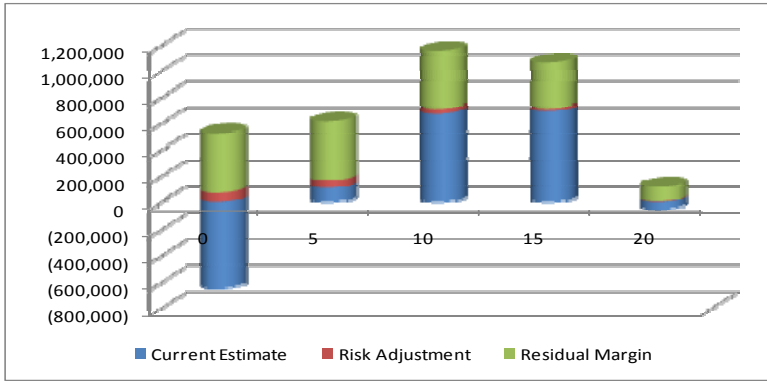
Term Life – Liability Components



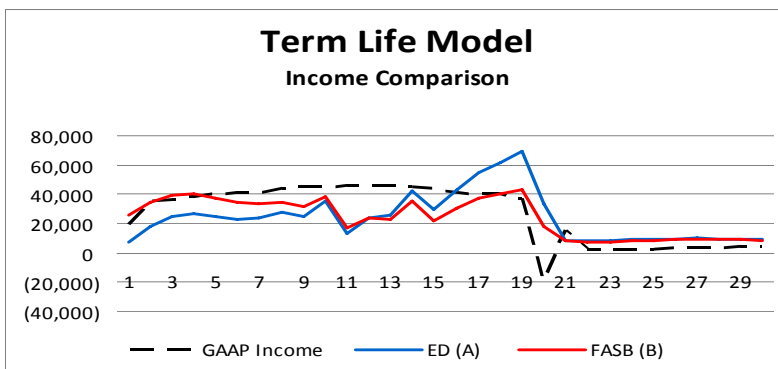
Term Life Liabilities – 3 Models



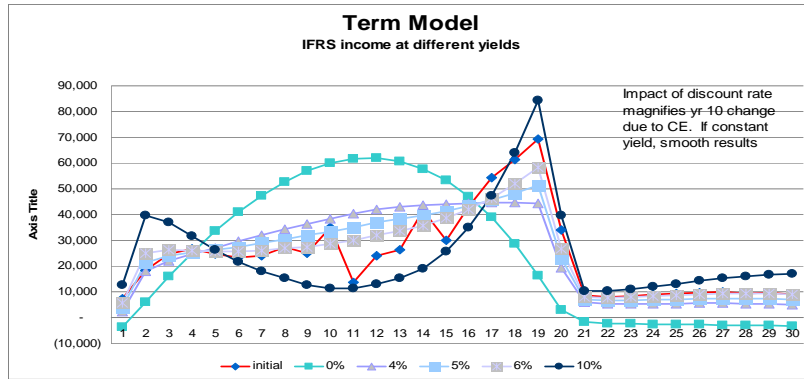
Term Life Liability Components



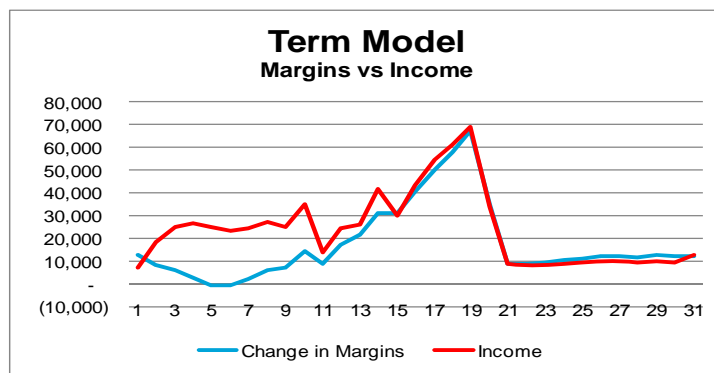
Term Life Income Comparison



Term Life – Impact of Discount Rates



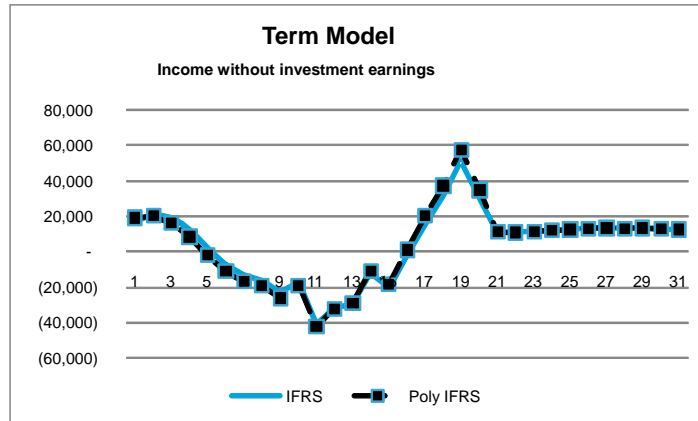
Term Life Margins vs. Income



Term Life – Results Verification

Solid – Margin change only;

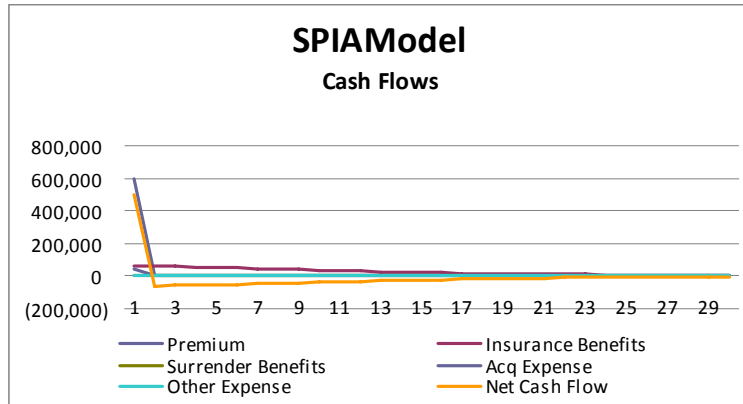
Box – earned rate is discount rate; assets equal IFRS liability



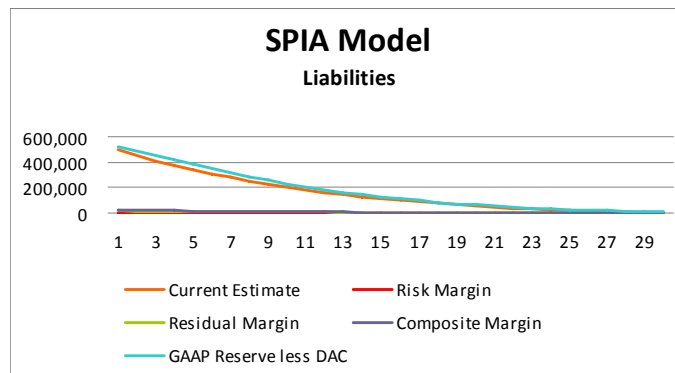
Single Premium Income Annuity

- Six cells: male, female; 65, 75 & 85
- All life only

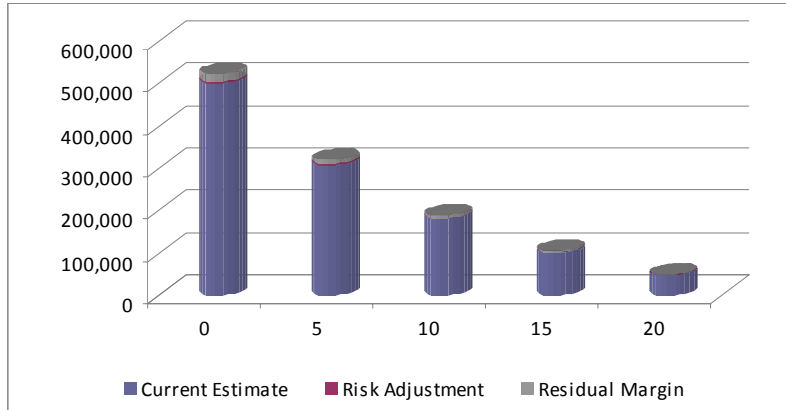
SPIA Cash Flows



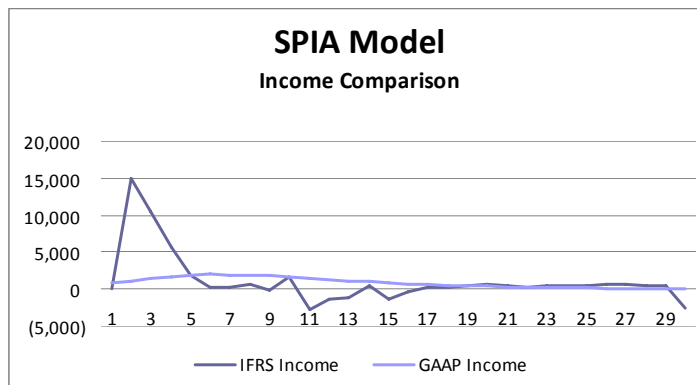
SPIA Liability Comparison



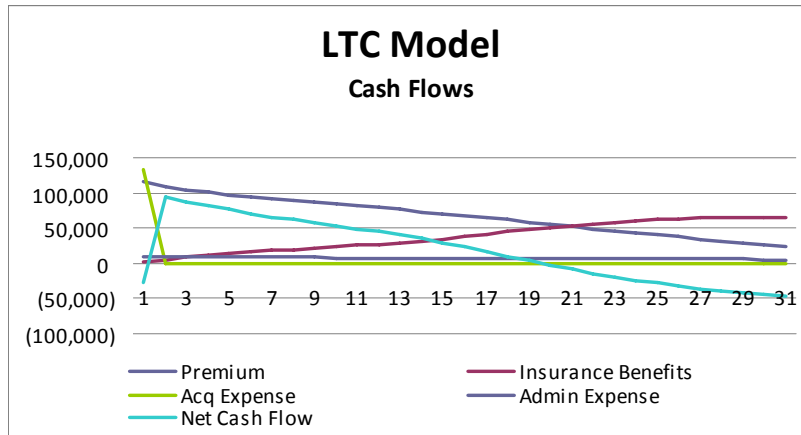
SPIA Liability Components



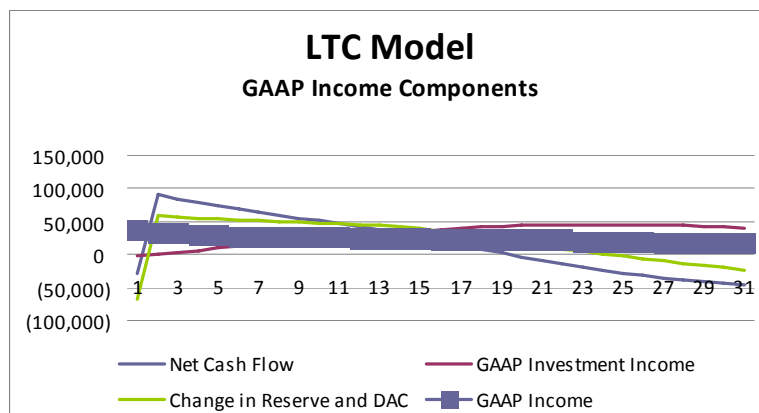
SPIA* Income Comparison



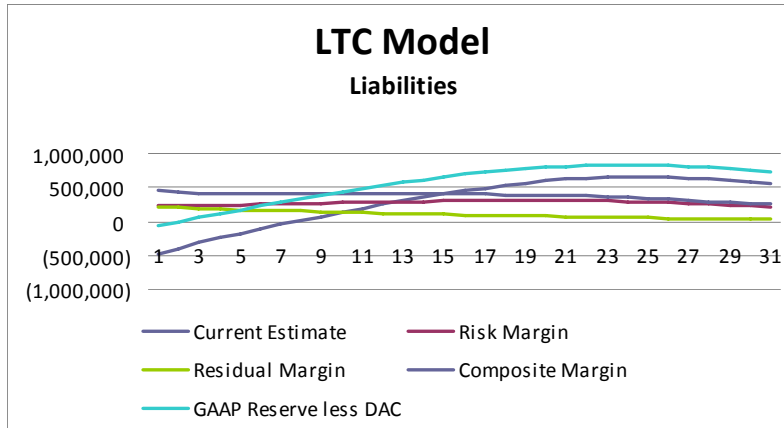
LTC* 1 of 5 Contract Cash Flows



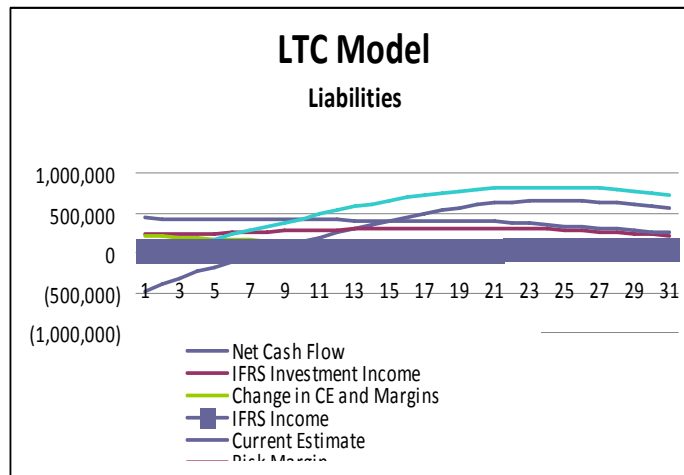
LTC* 2 of 5 Elements of GAAP Income



LTC* _{3 of 5} Comparative Liability Levels

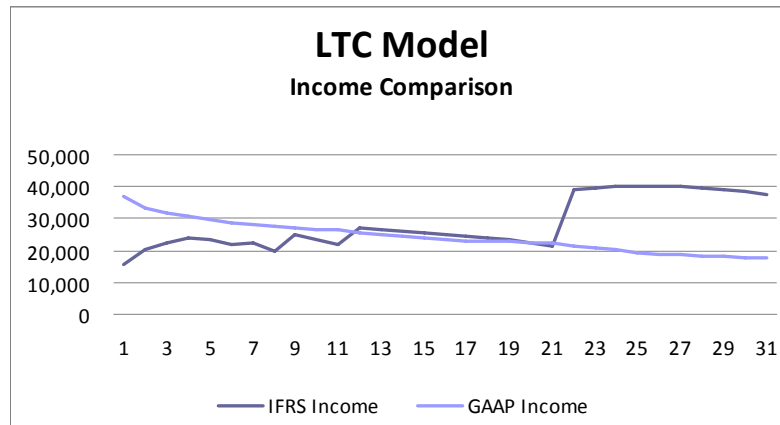


LTC* _{4 of 5} Components of Income



LTC* 5 of 5 Income Comparison

Actuaries
Risk Management



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Next Steps

Actuaries
Risk Management

- Comment Period Ends November 30
- IWG Meeting in London Nov 11–12
- Further Outreach
- Field Testing
- Board Deliberations
- Standard Issued July 2011
- Implementation...2 Years Later



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Questions & Answers

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