

Actuarial Club of the South West

Fair Value: An Update on Current Developments

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Agenda

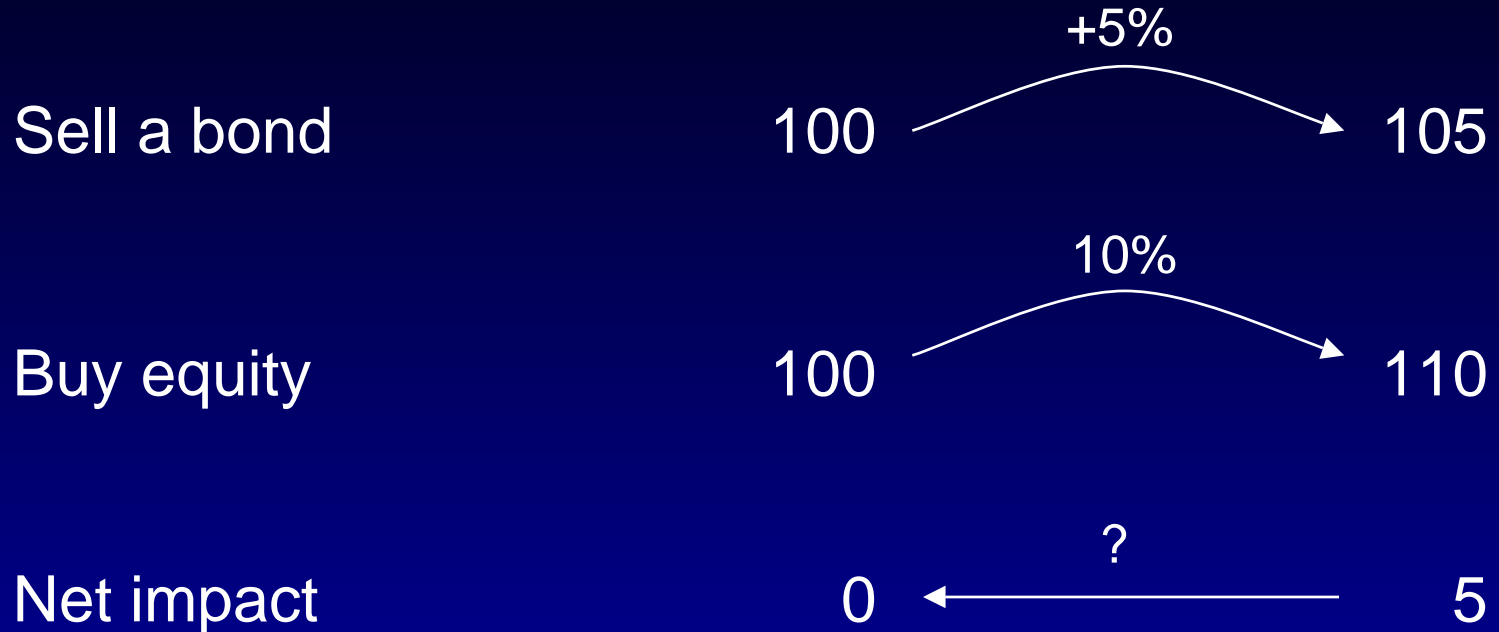
**Fair Value
Principles**

U.S. Developments

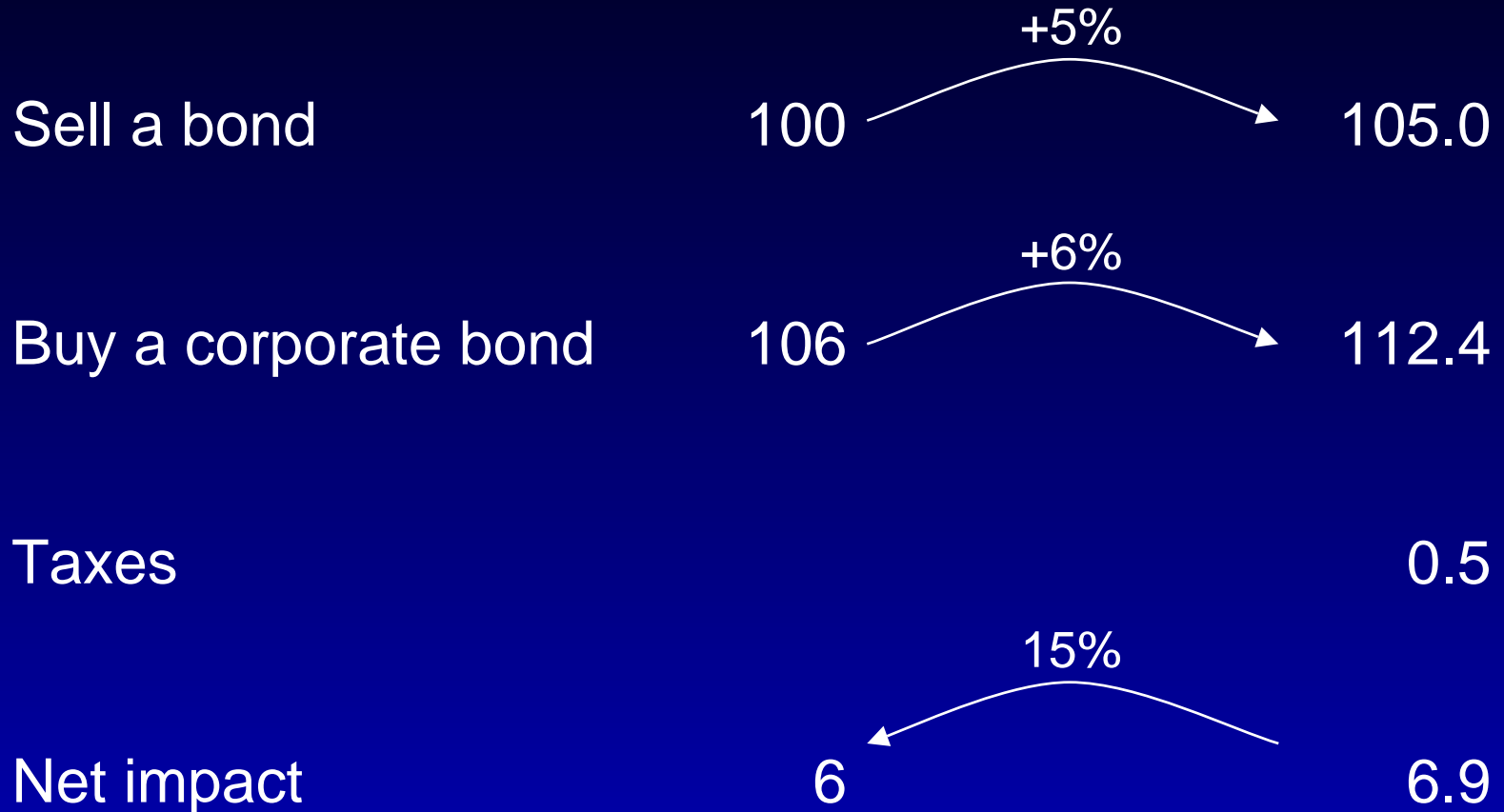
**Update on
International**

Worked Examples

Simple arbitrage valuation example



More like insurance?



Basic principles

- Value assets and liabilities separately
- Use market prices when possible
- Otherwise impute market value using modern finance techniques
 - Replicating portfolios
 - Stochastic modeling
 - Option pricing techniques
- May give significantly different results than traditional techniques

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- Fair value is discussed in the following standards:
 - SFAS 107 — Fair value of financial instruments
 - SFAS 115 — Accounting for certain investments in debt and equity securities (market value)
 - SFAS 133 — Accounting for derivative instruments and hedging activities
 - SFAS 141 — Business combinations
 - SFAS 142 — Goodwill and other intangible assets
- These standards do not define fair value for insurance contracts

Fair Value as defined in SFAS 107

- Quoted market prices if possible
- If not, use:
 - Carrying amount if short term
 - Quoted prices of similar instruments
 - Option pricing models
 - Discounted cash flows

Fair Value as defined in SFAS 142

- The amount at which that asset (or liability) could be bought or sold in a current transaction between willing parties
- Hierarchy of methods:
 - Quoted market prices
 - Present value technique (cf Concepts 7)
 - Price multiples of earnings or revenue
- Concepts 7 has a preference for “expected present value” techniques which consider a range of different outcomes
 - This may be read to imply “expectation pricing” as opposed to “no arbitrage pricing”
 - However, the paper also recognizes option pricing models which are based on no arbitrage pricing
 - More traditional NPV techniques are also recognized

U.S. and International

- FASB would welcome the worldwide use of a single set of high-quality accounting standards
 - But these do not exist
- FASB staff members are monitoring the IASB insurance projects
- No significant comments at this stage

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IASB Insurance Project — Overview

- Started in 1997:
 - An Issues Paper was published in November 1999
 - Subsequently a Draft Statement of Principles
- In May 2002 the IASB split the insurance project into a Phase I and Phase II:
 - Phase I to be in place for 2005
 - Exposure Draft for Phase I expected at end June 2003
 - Final standard is expected in early 2004
- European regulations require “approved” IFRS/IAS to be used from 2005 by listed companies in their consolidated financial statements
 - Not directly applicable to U.S. companies but likely to impact those with European parents

Basic rules for Phase I

- Companies will be allowed to carry on using their existing local GAAP basis (including DAC assets) subject to the following:
 - Assets are valued at market value
 - Remove any catastrophe or equalization provisions
 - Introduce a loss recognition test
 - No offset of reinsurance assets against related direct liabilities and no change to the measurement basis for liabilities on reinsurance
 - Split participating business investment reserves between a policyholder liability and shareholder equity
 - No profit at inception from reinsurance. Any profit otherwise arising will have to be spread on “a systematic and rational basis over the period of the underlying risk exposure”
- U.S. GAAP rules would appear to meet most of these requirements

Other Phase I rules

- No prohibition on use of embedded value reporting (commonly used in Europe)
- No prescribed formats for the income statement
- Any changes to accounting policies that move away from fair value principles will be barred
- IAS 39 (Financial Instruments: Recognition and Measurement) will apply for asset valuations of financial instruments and hence there is likely to be an asset/liability mismatch
 - This mismatch is already a feature of U.S. GAAP reporting

IAS 32/39 (Financial Instruments) applies to investment type contracts

- Deposit accounting with premiums and claims not recognized
- Restriction on the release of front end fees into income
- Embedded derivatives in both investment and insurance contracts need not be separated out (and subject to fair value) if payment is made only if an identified insurance event occurs (provided the derivative is not leveraged in relation to the host contract)
- For investment contracts, if liability is assessed on an amortized cost approach, guaranteed surrender values on nonparticipating contracts will need to be separated out if significantly different from amortized cost

Disclosure

- Phase I will require detailed disclosure to:
 - Identify and explain the insurance-contract-related amounts reported in the balance sheet, income statement and cash flow statement
 - Help users understand the estimated amount, timing and uncertainty of future cash flows from insurance contracts
- It is envisaged that companies will be required to disclose fair value of insurance liabilities from December 31, 2006 (with no prior comparatives)
 - This is required in order to disclose fair value earnings in 2007

Insurance Project — Phase II

- A balance sheet approach rather than deferral and matching
- Use of fair value approach (i.e., market consistent), but:
 - Can use entity specific assumptions where little market evidence exists
 - In the absence of market evidence to the contrary no net gain at issue to be recognised
- Future premiums to be recognized if, and only if:
 - Policyholders have uncancellable rights that constrain the ability of the insurer to reprice in line with new contracts
 - Those rights will fall away if premiums are not paid
- Not allowing net gains at issue is a move away from a true fair value approach — not clear how these delayed profits are to be released

Insurance Project — Phase II — Other Developments

- Undiscounted reserves are considered inconsistent with fair values (major issue for P&C insurance)
- The expected investment return on backing assets is not considered relevant to the measurement of fair value liabilities
 - Except where there is a direct link to policyholder benefits (e.g., variable products)
- Acquisition costs should be written off as incurred (the DAC asset would be implicit in the fair value liability)
- Liability measurement should include “market value margins”
- Assessment of credit risk should be based on the credit risk of the contract, allowing for any policyholder protection schemes
 - This is still an area of further discussion
- No discounting of deferred tax liabilities

Response to IASB Fair Value proposals

- Criticisms from the Geneva Association, the ACLI and some insurance companies:
 - Non-neutral impact on business practices and strategic decisions
 - No recognition of portfolio effects — balance sheet is disaggregated
 - Significant implementation problems — economic theory not fully advanced
- An additional concern may be the likelihood of increased volatility in reported earnings
- In some countries, the balance sheet impact could be material

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Comparison of traditional pricing to a market-consistent pricing approach

- Two detailed examples
 - Fixed interest SPDA: asset credit spreads vs. discount rate
 - Variable Annuity: different fund growth and discount rates
- Other summary results
 - GMDB on Variable Annuity: using “option-pricing assumptions”
 - Term Insurance: discount rates and market value margin

Fixed Interest SPDA example specifications

- Issue age: 60
- Premium: \$30,000
- Acquisition expense: \$100 per policy plus 7.50% premium
- Maintenance expense: \$50 per policy
- Target interest spread: 1.60%
- Surrender charge: 7, 7, 6, 5, 4, 3, 2, 0%
- Lapse and partials: 4, 4, 5, 6, 7, 8, 9, 42, 17%
- Required capital: 5% reserves
- Projection Period: 20 years

Fixed Interest SPDA traditional results

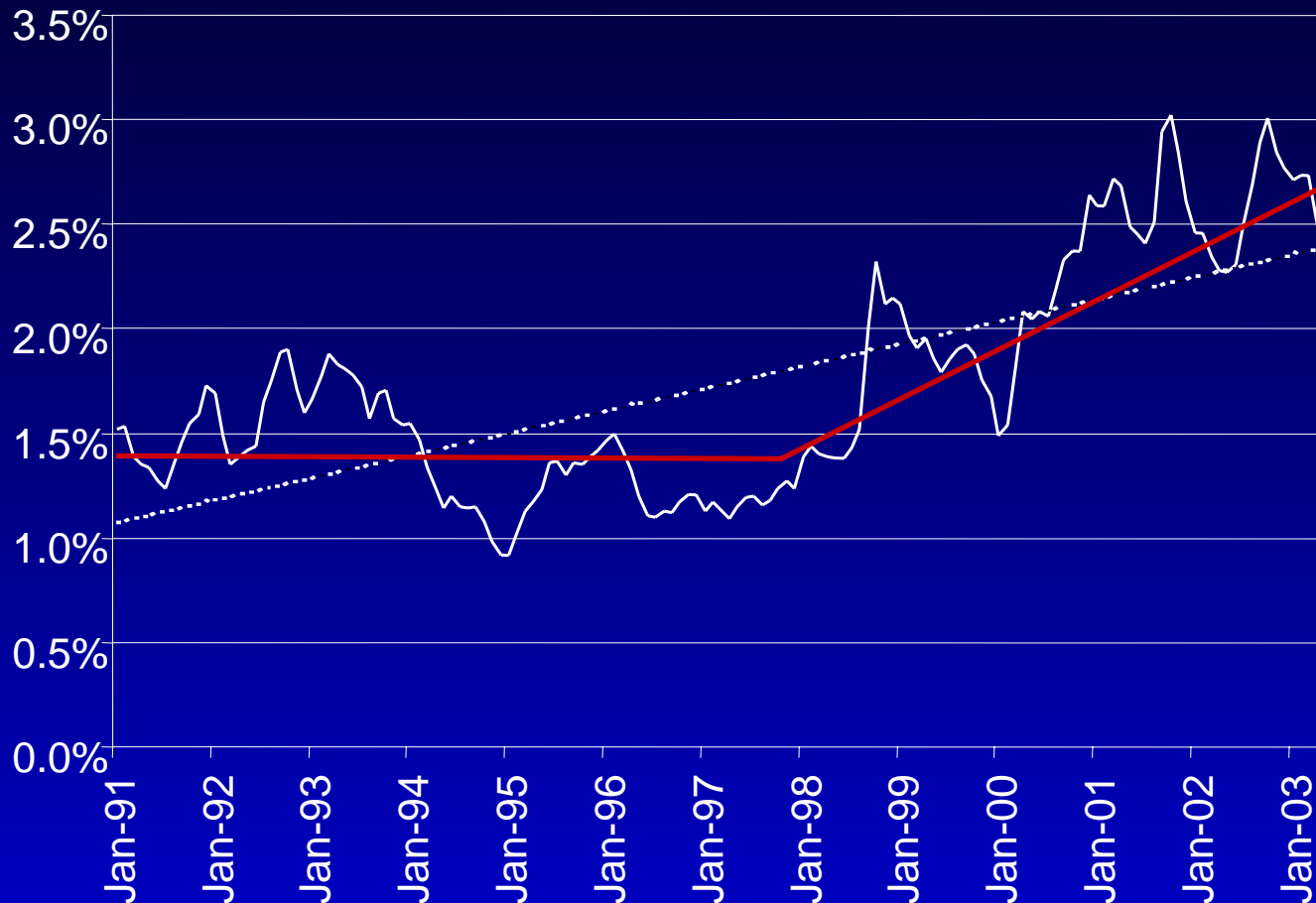
- Results based on net earned rate of 5.10% and credited rate of 3.50%:
 - IRR = 10.0%
 - NPV @ 8.00% = 0.71% premium
- How is 1.60% spread achieved?
 - Credit risk
 - Duration mismatch (less common)

Market-consistent methods recognize risk margins as they are earned

- A traditional pricing approach may recognize risk margins up front when the contract is written
- The traditional approach
 - projects the risk margins
 - deducts a charge for capital
 - discounts the net result at a risk discount rate
- If the risk margin exceeds the charge for capital an up-front profit will then arise
- This up-front profit may be larger in recent history than a few years ago due to:
 - Larger asset spreads
 - Lower discount rates
 - Investing up the credit curve

Corporate bond credit spreads have widened

Credit spreads based on Moody's long-term A rated bond yields compared to 10-year Treasury bond yields



The charge for capital offsets only a small portion of the extra yield

	AAA-A Rated Bond	BBB Rated Bond
Credit Spread	0.8% to 1.3%	2.2%
200% RBC	0.6%	2.0%
Capital charge as % of RBC	10%	10%
Cost of Capital	0.06%	0.2%
Net Spread	0.74% to 1.24%	2.0%

SPDA: value of new business is negative under market-consistent specifications

	Traditional	Market-Consistent
Earned	5.1%	5.1%
Credited	(3.5%)	(3.5%)
Expenses	(1.0%)	(1.0%)
Cost of Capital	(0.2%)	—
Risk Margin	—	(0.8%)
Result	0.4%	(0.2%)

Variable annuity example specifications

- Issue age 60
- Premium: \$50,000
- Acquisition expense: \$150 per policy plus 8.35% premium
- Maintenance expense: \$90 per policy
- Fund loads: 1.50% plus \$30 per policy per year
- Investment advisory fee: .75% (with expenses of .50%)
- Surrender charges: 7, 6, 5, 4, 3, 2, 1, 0%
- Lapse and partials: 5, 6, 7, 8, 9, 9, 10, 37, 22, 17, 15%
- Required capital: 1% of fund value
- FIT: 35% on statutory income
- Projection period: 20 years

Traditional and market-consistent assumptions for variable annuity products

	Traditional	Market-Consistent
General account rate	6.0%	4.5%
Separate account rate	8.0	4.5
Discount rate	8.0	4.5

This is a replicating portfolio approach

Variable annuity: value of new business at issue

IRR	Traditional PV @ 8.0%	Market Consistent PV @ 4.5%
13.7%	1.0% of premium	0.8% of premium

- Impact of market consistent measure by component:
 - Cost of capital 11 basis points
 - CARVM adjustment (capital relief) (29)
 - Gearing of expenses and charges (7)
 - Net result (24)
- The asset charges have the same value when the same rate is used to project and discount them, regardless of which rate is chosen

Market-consistent results for other products

■ GMDB Example

- A similar analysis was done considering various GMBD options on the illustrated variable annuity
- Benefit costs were two to five times higher when considered on a market-consistent basis
- This difference reflects the high market risk charges for extreme adverse events under Black-Scholes type approaches

■ Term

- Results were mixed. Term profitability was higher on a market-consistent basis unless mortality margins were considered in market-consistent value
- The cost of “redundant” reserves was significantly less when considered on a market-consistent basis

What conclusions can we draw from these examples?

- Variable products may not be much affected, as long as discount rates are consistent with assumed growth rates
- Protection products are a “mixed bag”; market-consistent valuation probably increases value unless margins offset
- Options and guarantees may have a significantly larger cost using market-consistent valuation
- Market-consistent valuation techniques may decrease the reported value of fixed asset intensive products such as SPDAs

We expect that the industry will move gradually to adopt at least some of these methodologies

Final thoughts on fair value

- Relatively distant accounting event for most U.S. based companies
- Fair value provides an alternative view as to the cost of guarantees and options
 - The market view may be used as a benchmark for these costs
 - Reconciling the market and internal view would shed more light on the balance between risk and reward in some products
- Fair value highlights the credit risk in certain portfolios
- May influence changes in product design and investment approaches
 - But probably only if is widely used and accepted
- A fair value view may help companies identify arbitrage threats and opportunities