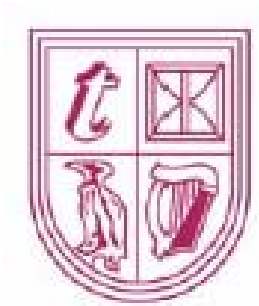


# MCEV and Update on IFRS Phase II Developments

## Life Insurance Accounting Sub-Committee

Presentation to Society of Actuaries in Ireland

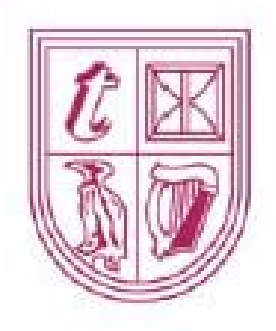
3rd February 2009

# Agenda

- MCEV
  - Introduction to EV methods
  - Market consistent theory
  - MCEV principles and guidance
  - Product impacts of move to MCEV
- Update on IFRS Phase II developments

# Life Insurance Accounting Ctee

- Eoghan Burns
- Brent Engelke
- Neil Guinan
- Steven Hardy
- Niall Kavanagh
- Andrew Kay
- Linda Kerrigan
- Brian Morrissey
- David Roberts



# Introduction to EV Methods

# Background

- Life Assurance ...
  - a complex business
  - which requires significant capital
  - where the final profits are unclear for a number of years.

plus

- Market feels it is at an information disadvantage - an asymmetry of information

equals

- Undervalued companies and expensive capital.

# The Aim

- In a 1959 paper by Anderson … an aim of embedded values is to value the cash flows consistent with the theoretical value that shareholders would place on them.
  - In 2009 this is still the aim.

- Embedded Values are **complex** and **subjective**.
- The market places a discount on both of these elements.

# Timeline of EV developments

- Traditional Embedded Value
  - First published in the mid-80's
  - ABI Guidance on "Achieved Profits" (2001)
- European Embedded Value (2004)
- Market Consistent Embedded Value (2008)

# History

- Developed as a concept in UK in the 1980s as a valuation tool
- Gained widespread acceptance among equity analysts in the 1990s
  - Analysts were operating in the dark before then
  - Only statutory information had been available previously
  - Was considered to be a useful measure of profit and an aid to putting a value of a company
  - Considered useful for new entrants such as banks entering the life assurance market
- Often produced as a supplementary measure to other profit measures

# Traditional Embedded Value

- Value of In-Force business
  - Future cash flows are projected and discounted

PLUS

- Net assets (on regulatory basis)

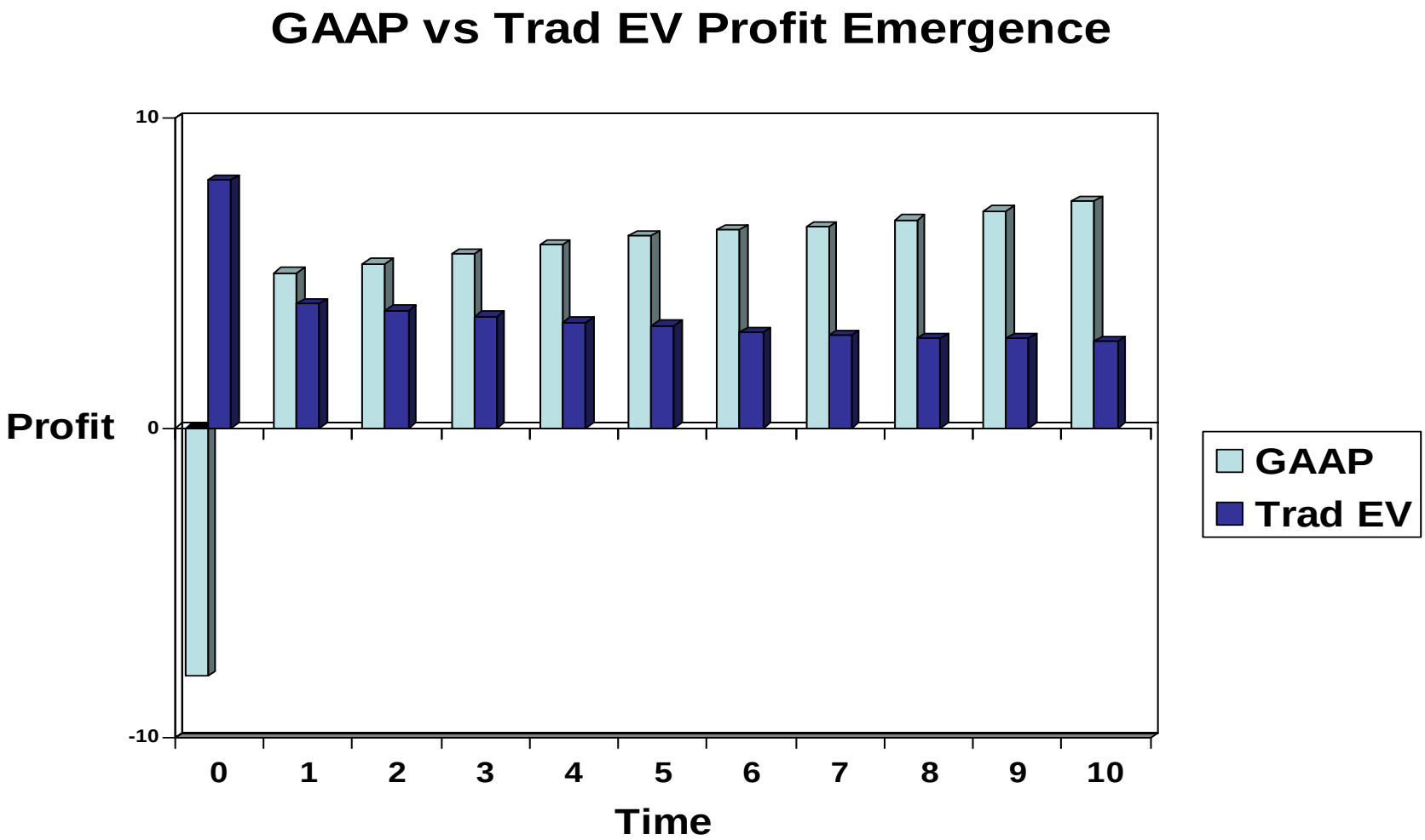
LESS

- Cost of Capital (to reflect the lower return on “locked-in” solvency capital)

# Traditional Embedded Value

- Value of In-Force is the present value of projected shareholder cash flows
- Single deterministic projection using
  - Estimates of future economic and non-economic experience
  - Economic experience includes risk premium eg
    - Return on Equities = risk-free + risk premium
    - Return on Corporate Bonds = risk-free + credit spread – expected defaults
- Discounted at **risk discount rate** intended to reflect the risk to shareholders of the expected cash flows not emerging.

# EV profit vs accounting profit



# Simple Example 1

- €100 due in 25 years
- Reserve = Present value of €100

- Backed by corporate bonds yielding 7%

- Realistic Reserve - PV @ 7% less 1% = €23
- Prudent Reserve - PV @ 7% less 2.5% = €33

# Simple Example 2

- €100 in Equities with guarantee maturity value

- Traditional EV
  - Assume future growth based on expected future return on equities
  - With a positive equity return assumption may assume guarantee has zero value

# Shortcomings

- Allowance for risk
  - Allowance for risk is subjective and unclear
- Options and guarantees
  - Expensive guarantees can be ignored if not currently in the money
- Asset Risks
  - Values driven by assets held
  - Balancing cost of associated risk not always held

# Traditional EV

- Embedded Value
  - Correct to consider company value in terms of future cash flows
  - Embedded Value very useful

- But difficult to know how
  - Subjective
  - Comprehensive
  - Consistent

- Further discount applied by market
- Rejected by IASB for Insurance Phase I

# CFO Forum

| | | | |
|---|---|---|---|
| Aegon | CNP | ING | Prudential |
| Allianz | Fortis | Legal and General | Scottish Widows |
| Aviva | Generali | Mapfre | Standard Life |
| AXA | Hannover Re | Munich Re | Swiss Re |
| BNP Paribas | IF P&C | Old Mutual | Zurich FS |

- Created in 2002
- High level discussion group consisting of the CFOs of 20 European-centred insurance groups
- Aim to improve shareholder transparency & value
- Also to avoid downsides of other reporting methods

# European Embedded Value

- EEV principles developed by the CFO Forum in 2004
- Aim: *to discuss issues related to new accounting regulations and creating greater transparency for investors*

- *EEV Principles:*

1. Covered business
2. EV components
3. Free surplus
4. EV as a measure
5. Required capital
6. PVIF
7. Options and Guarantees
8. New business
9. Projection assumptions
10. Economic assumptions
11. Participating business
12. Disclosure

# Main changes

- Formalise EV practice

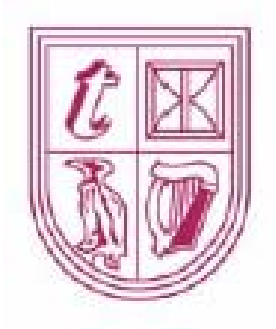
- Steps forward in term of
  - Disclosure
  - Consistency of economic assumptions
  - Valuation of options and guarantees

# Options and guarantees

- Principle 7 - must allow for:
  - Potential impact of financial options and guarantees
  - Including time value
  - Based on stochastic techniques
  - Explicitly deducted from the PVIF
  - Still some scope for differences…
- BUT
  - Not necessarily market consistent
  - No guidance on asset models
  - Allowance for policyholder behaviour
  - Can allow for management discretion

# Risk discount rate – allowance for risk

- Should be set equal to the risk free rate plus a margin
- Risk margin should reflect any risk that is not allowed for elsewhere
- BUT
  - Scope for different approaches
    - Top down – aggregate view of risk
    - Bottom up – product/business unit risk
  - Suitability of risk discount rate unclear



# Market Consistency Theory

# The MCEV Approach

"…market consistency is the worst form of valuation, except for all the other forms that have been tried."

Paul Fulcher and Colin Wilson writing in The Actuary

# The MCEV Approach

- The market correctly values market and credit risk
- Taking credit in advance for the equity risk premium or credit risk spreads is inconsistent with same investors' valuation of an investment in the underlying equities or corporate bonds
- Or €1 equity = €1 gilts

# Simple Example 1

- €100 due in 25 years
- Possible to replicate this liability with assets that will always match the liability – the replicating portfolio
- Reserve = Market Value of Replicating Portfolio
- So if 25 year Gilt Zero Coupon Bonds are yielding 3% then MC reserve = PV @ 3%
- MC reserve = €47
- Prudent or Realistic question no longer relevant

# Simple Example 1

- Benchmarks Credit and Market Risk to the Market

- If €1 will buy …

Zero Coupon Bonds yielding 3%

or

Corporate Bonds yielding 7%

….then this is the Market's value of the additional risk associated with corporate bonds

# Simple Example 2

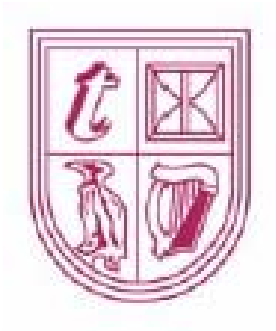
- €100 in equities with guarantee maturity value
- MC reserve = MV of equities plus value of put option
- Picks up the cost of Options and Guarantees
  - Even when out of the money

# MCEV Offers

- MCEV attempts to value shareholder cashflows on a risk adjusted basis - consistent with how the market would value them.
- Offers
  - Objectivity – calibrated to the market,
  - Value of liability not affected by the assets backing it,
  - Very good at picking up the time value of options and guarantees
  - Consistent with other possible market investments

# Gaps

- Not so good at mismatch risk
  - Since link between assets held and liability has been broken. Still require sensitivities
- Or, risks where markets do not exist eg persistency
  - In theory these risks can be diversified away by investors and so only the frictional cost should be allowed for.
  - CFOs  suggests the calculation of a cost of non-hedgeable non financial risks eg to cover the uncertainty in the best estimate persistency assumption.



# MCEV Principles/ Guidance

# MCEV Principles and Guidance

- Built on previous EEV initiative
- Tighter guidance & move to MCEV
- Desire for de facto industry standard
- 17 Principles laid out in the CFO Forum's "Principles and Guidance"

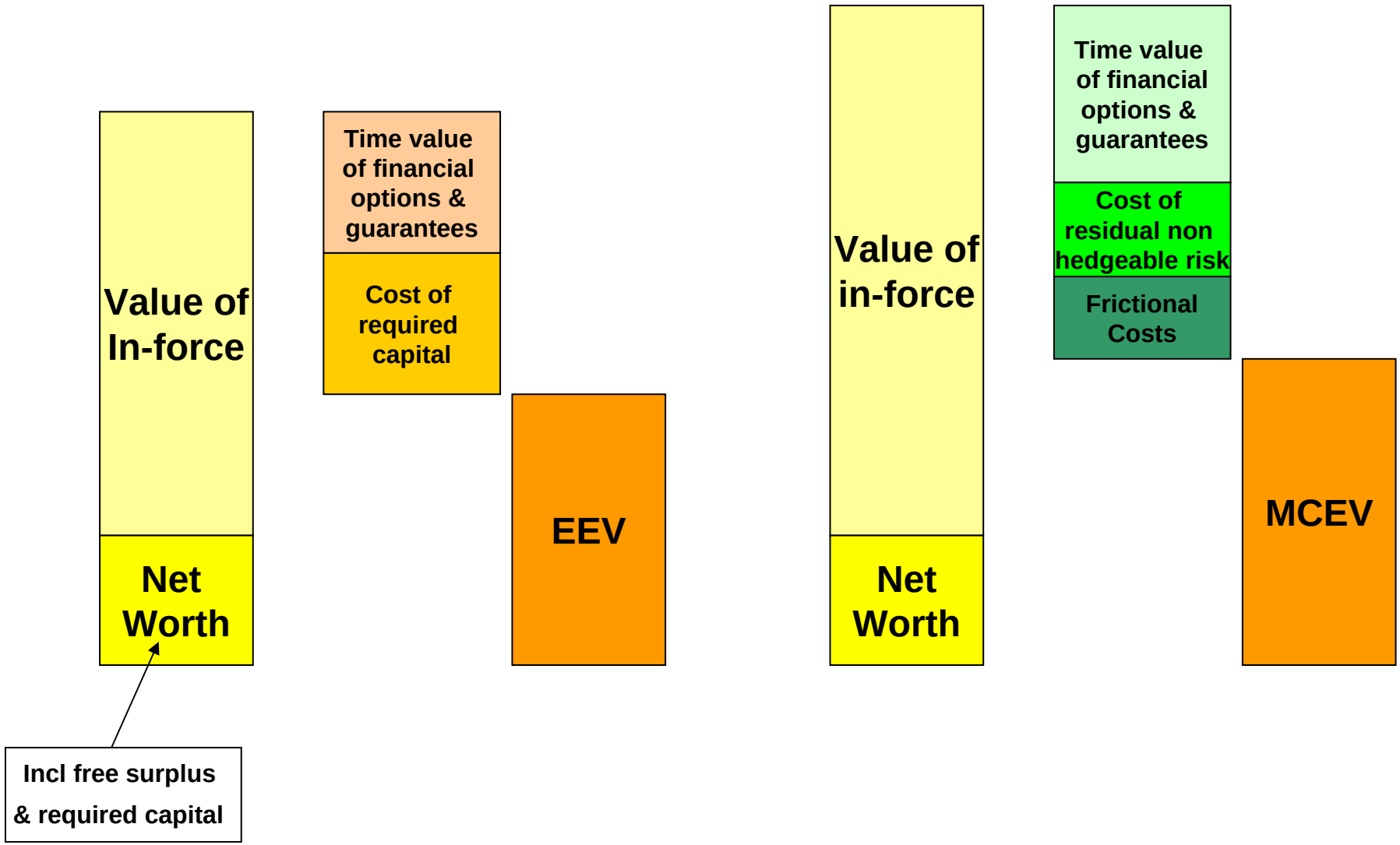
Principles

1. Introduction
2. Coverage
3. Definitions
4. Free Surplus
5. Required Capital
6. VIF
7. FOGs
8. FCoRC
9. CoRNHR
10. New Business and Renewals
11. Assessment of Non Economic Assumptions
12. Economic Assumptions
13. Investment Returns and Discount Rates
14. Reference Rates
15. Stochastic Models
16. Participating Business
17. Disclosures

# Why a market consistent approach

- Improves consistency
- Trends in EV reporting
- Accounting and solvency trends
- No asset arbitrage

# Comparison of MCEV vs EEV



# MCEV = FS + RC + VIF

- Free Surplus (FS)
  - Market value of assets not required to support inforce business
- Required Capital (RC)
  - Required capital at the greater of regulatory requirement or company target level
  - Regulatory requirement includes amounts "encumbered" by local supervisory restrictions
  - Company target level to be used if higher – for example targeted rating agency level
- Value of Inforce Business (VIF)

Value of future new business is excluded from MCEV

# Value of Inforce Business

VIF = PVFP – FOGs – FCoRC – CoRNHR

- PVFP:
  - Present Value of Future Profits
  - Profits are post-tax transfers to shareholders
  - No credit in present value for future returns in excess of swaps
- FOGs:
  - Time Value of Financial Options and Guarantees
  - Must use Stochastic Techniques
- PVFP + FOGs reflects current cost of hedging financial risks

# Value of Inforce Business

VIF = PVFP – FOGs – FCoRC – CoRNHR

- FCoRC (frictional costs of required capital):
  - Reflects taxation and investment costs of assets required to back required capital

- CoRNHR (costs of residual non-hedgeable risks):
  - Allowance for non-hedgeable risks not already allowed for in the PVFP or FOG cost (e.g. operational risks, allowance for uncertainty of shareholder cashflows..)
  - Presented as an average cost of capital charge (between 2% – 6% may be common)
  - Residual Non-Hedgeable Risk Based Capital based on internal economic capital model
  - The capital determined should be consistent with a 99.5% confidence level over a one year time horizon i.e. consistent with Solvency II capital calculations

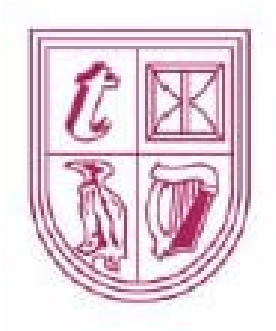
# MCEV Principles

- Non-economic assumptions
  - Best estimate and actively reviewed
  - Supported by appropriate experience analysis
- Economic assumptions
  - Market observable
  - Updated for every MCEV reporting date
- Investment Returns
  - Market consistent
  - VIF discounted at Swap Rates

# Disclosures

- Any non-compliance to principles to be disclosed
- Assumptions
- Methodology
- Analysis of MCEV earnings
- Sensitivities

- Adoption
  - MCEV mandatory for CFO Forum members as of year-end 2009
  - Early adoption possible
  - Must be subject to independent external review



# MCEV Product Impact

# MCEV Product Impact

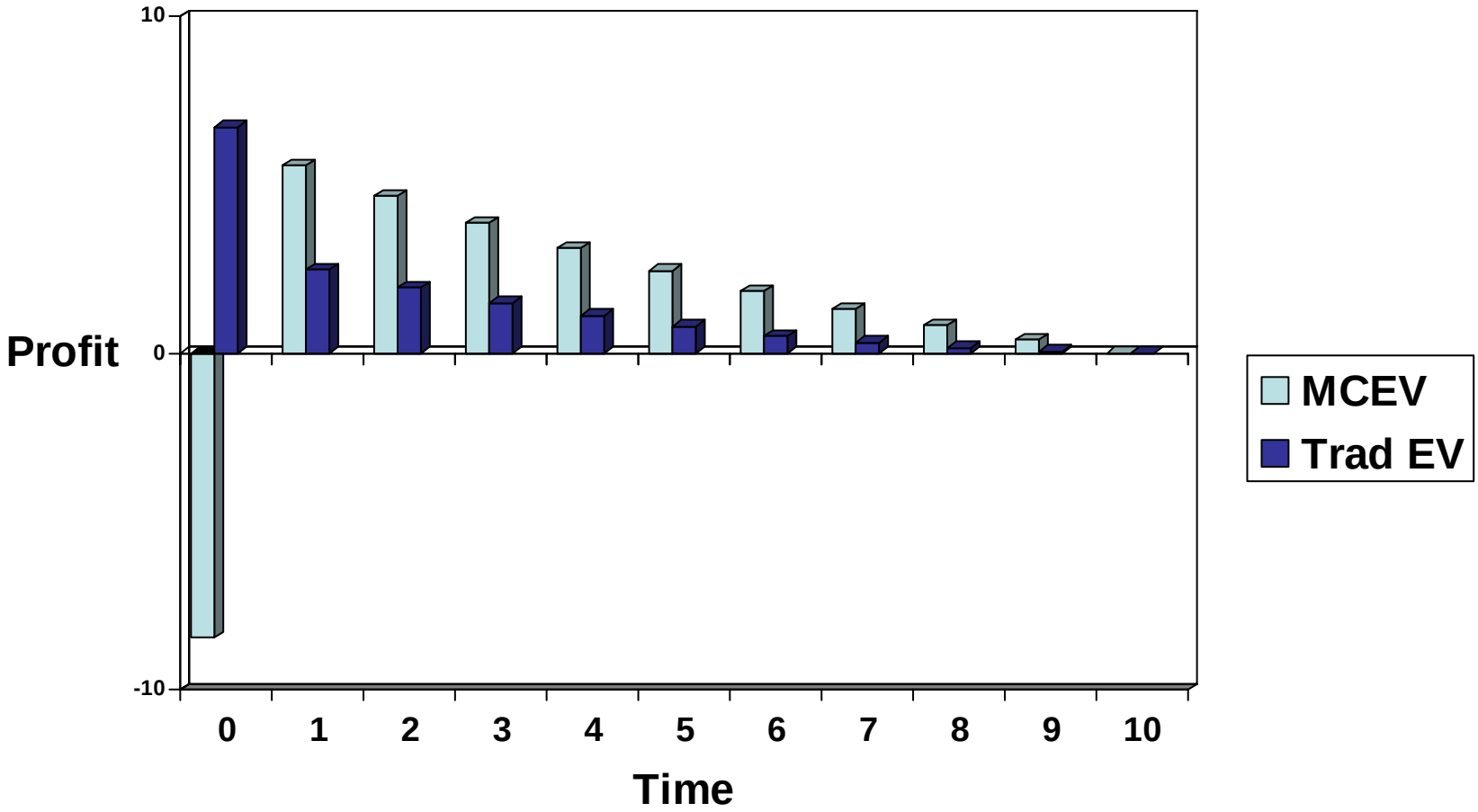
- Impact will depend on starting point
  - Top Down EEV
  - MCEV

- .. And product type
  - Potentially significant impact for annuities in payment
  - Potentially positive impact for products where risks are theoretically diversifiable

# Immediate Annuity

- Generally annuities in payment are backed by assets exposed to credit risk
- New business pricing in companies may allow for credit risk and liquidity risk premia
- Credit cannot be taken for credit and liquidity risk premia in MCEV – only risk free

# MCEV vs Trad EV Profit Emergence - Immediate Annuity



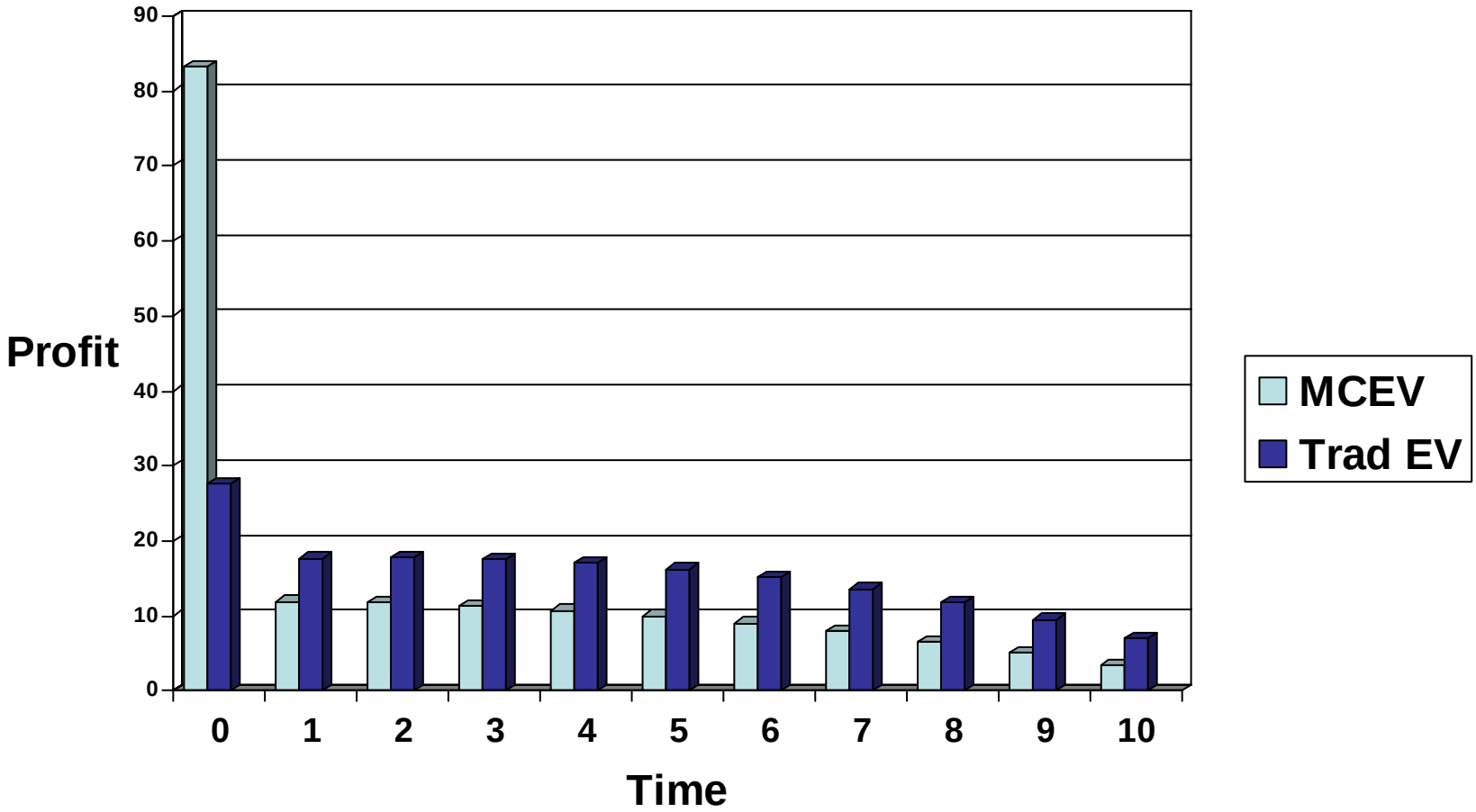
# Immediate Annuity

- Negative New Business Profits on MCEV if credit taken for liquidity and credit risk premia in pricing
- Under MCEV higher profit at later durations as credit and liquidity spreads emerge in underlying asset portfolio
- For in force, an increase in credit or liquidity spreads leads to a reduction in asset prices and no corresponding increase in returns in MCEV projections

# Term Assurance

- In theory, term assurance cashflows are fully diversifiable from other risks in investors portfolio
- Shareholder cashflows can be discounted at the risk free rate
- Frictional costs will be equal to tax and investment charges on the backing capital – less than 1%
- Result heavily influenced by the approach taken to allow for residual cost of non hedgeable risk

# MCEV vs Trad EV Profit Emergence - Term Assurance



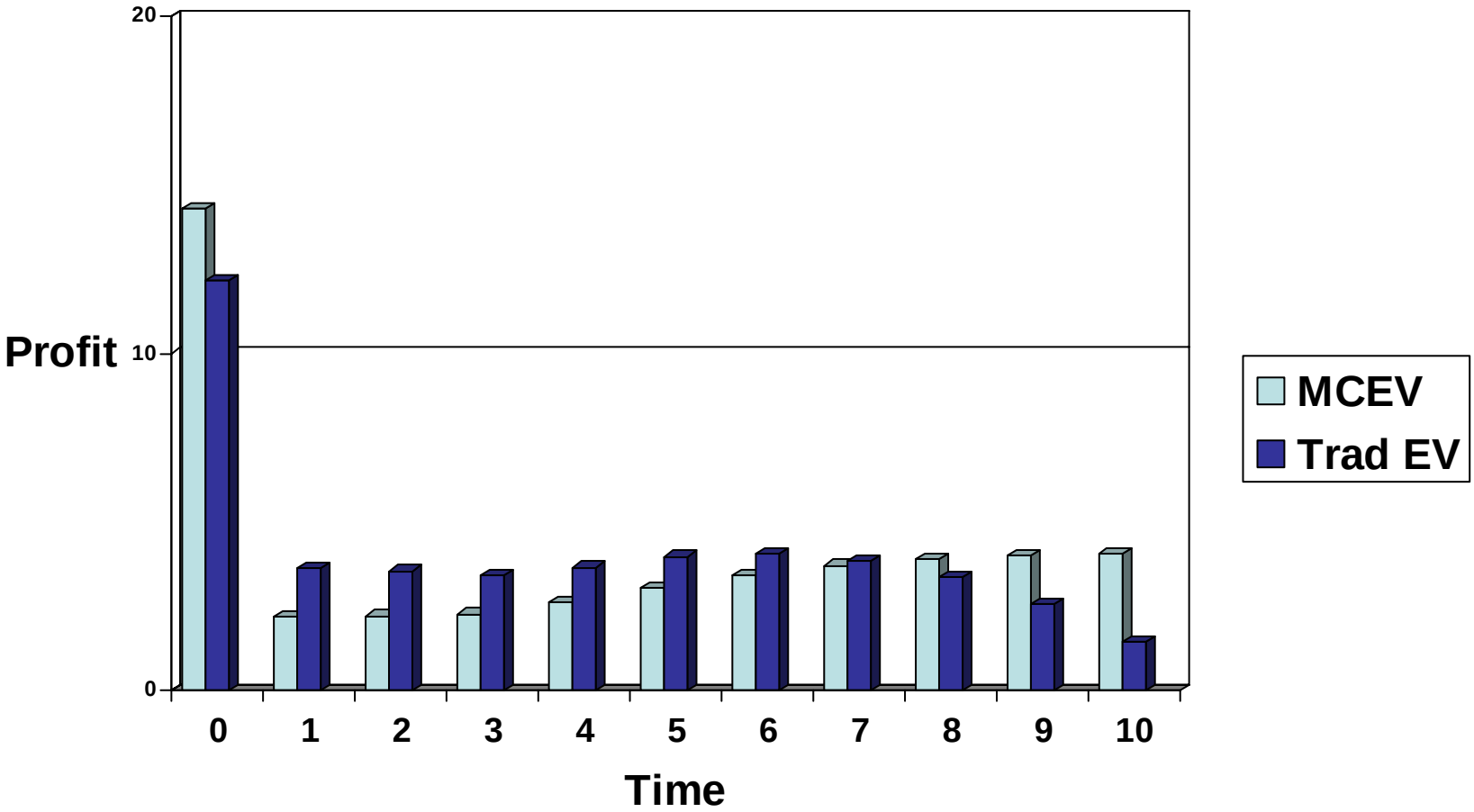
# Term Assurance

- Larger NB profits under MCEV and lower subsequent profits due to unwinding of lower risk discount rate vs traditional EV approach (risk discount is close to risk free)
- Graph shows extreme example where no allowance is made for the cost of residual non hedgeable risks in the term assurance – assumes that life mortality risks are fully diversifiable and best estimate allows for uncertainty in experience and potentially asymmetry in assumptions
- … and ignores other non hedgeable risks in respect of term assurance such as operational or credit risk
- In practice companies are likely to incorporate allowances for these factors which bring the profit emergence closer together under the two approaches – a market standard is likely to emerge

# Regular Premium Unit Linked

- Investment charges will be projected assuming unit growth at the swap rates
- And discounted using the same rate
- Capital costs should be low under both approaches although need to consider the allowance for operational risk under MCEV

# MCEV vs Trad EV Profit Emergence - Unit Linked Product

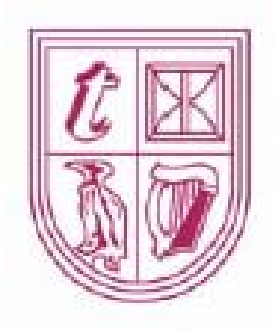


# Regular Premium Unit Linked

- The use of the risk free rate for projection and discounting under MCEV leads to offsetting impacts which results in higher MCEV profits at time 0
- In subsequent years the unwinding of a higher RDR leads to a larger profit under traditional EV initially
- At longer durations this is offset by the actual realisation of higher investment management fees than allowed for under the MCEV projection basis – this results in higher MCEV profits at later durations

# Current Issues

- Market Consistent impetus has hit a bump
  - “Dislocation” of markets has meant a pull back from pure market consistent methodology
  - Must cast a shadow over market consistent methods even if/ when markets return to stability



# IFRS Phase II Update

# Phase II: Introduction

- IFRS 4 (Phase I) was only intended to be an interim standard
- IASB issued a Discussion Paper (DP) in May 2007 setting out its preliminary views on the phase II standard
- There were 162 responses to the Discussion Paper
- IASB started its review of the responses to the DP in February 2008
- IASB staff held education sessions for the Board at its September and October 2008 meetings

# Timetable

| | |
|---|---|
| • Board meetings | Jan 2009 to Sep 2009 |
| • Exposure Draft | Q4 2009 |
| • Final Standard | Q2 2011 |
| • Implementation | 2012 / 2013? |

# Current Exit Value
# The three ‘building blocks’

**Explicit, unbiased, market-consistent, probability-weighted and current estimates of contractual cash flows**

**Current market discount rates that adjust the estimated future cash flows for the time value of money**

**An explicit unbiased estimate of the margin that market participants require for bearing risk and providing other services**

# Current Exit Value Respondents' views

- Support for building blocks

- Significant opposition to current exit value
  - Represents a hypothetical transaction
  - Cash flows of the insurer are more relevant
  - Own credit risk not relevant to measurement of insurance liabilities

# Discussion Paper
# Other contentious areas

| Initial view | Implications |
|---|---|
| Which cash flows?<br>● **Only contractual rights and obligations should be measured** | ● **Future premiums taken into account only where guaranteed insurability**<br>● **Discretionary payments recognised only where a legal or constructive obligation** |
| 'Day one' profits<br>● **Do not calibrate risk margin to premium (less acquisition costs)** | ● **Mixed views** |

# Differences Of Opinion

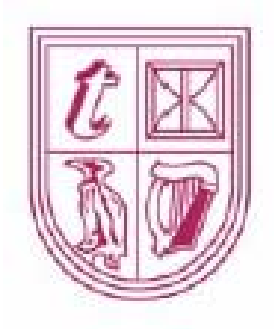
- CFO Forum
  - Single measurement model consistent with Solvency II
  - Differences between IASB and Solvency II (QIS 4) models include:
    - Contractual cash flows v all cash flows
    - Market participant expenses v entity specific expenses
    - Own credit risk included/not included in measurement
    - Day one profit?
- GNAIE
  - Separate models for life and non-life
  - Life – discount rate based on asset returns
  - Non life – current exit value model
    - Costly to implement
    - Not a significant improvement

# Current Fulfilment Value

- 'Current fulfilment value'
  - Uses entity specific estimates and cash flows
  - Does not reflect a liability's own credit characteristics
- Three versions of fulfilment value, with different treatment of risk margin
  - Cost of capital (Solvency II)
  - Cost of capital with additional margin to remove day one profit
  - Single margin calibrated to premiums less acquisition costs
- Board educational sessions, therefore no decisions

# IFRS Phase II
# The way forward

- Conflicting demands on IASB resources
- Whether all expected cash flows can be incorporated in IASB model
- Accommodating the conflicting views of CFO Forum and GNAIE
- Field testing?
- Interaction with FASB



# Q&A