

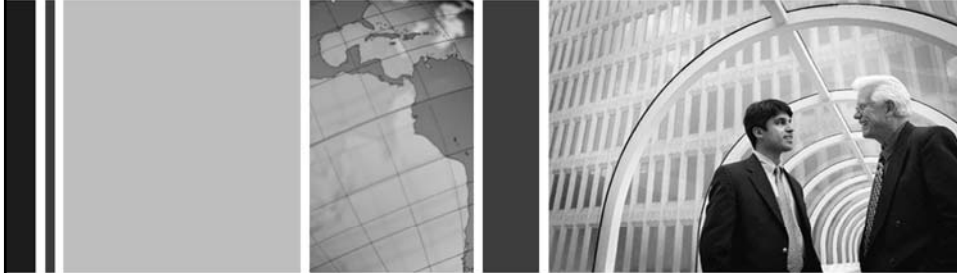


SOCIETY OF ACTUARIES

**Market-Consistent Embedded Value Seminar
December 2008**

Session 2: Recent CFO Forum Updates
[Michael Abbink](#)

watsonwyatt.com



MCEV – Recent updates and Survey

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Watson Wyatt Worldwide

December 4, 2008

Market-Consistent Embedded Value
December 4-5, 2008 | Philadelphia, Pa.



Agenda

- CFO Forum update
 - Background
 - Some observations on methodology
 - Financial impact
 - 2007 disclosures trends

- Highlights of a recent WW industry survey on MCEV



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CFO Forum EEV principles (2004)

- In response to IFRS proposals and investor pressure
 - 12 principles to align traditional EV methodology
 - Explicit assessment of risk
 - Stochastic valuation of cost of guarantees
 - Enhanced consistency in disclosures

- But a compromise and some criticism not addressed
- Initial rush led to ill-thought-through approaches
- Resulted in investor disappointment

Mark to market accounting slowly accepted by industry

- Regulatory solvency frameworks in EU
 - ICA (UK) and SST (Switzerland)
 - Solvency 2 (Expected 2012)
- IFRS 4 - phase 2
 - Discussion paper (2007) upholds most of DSOP proposals
- EEV disclosures started to be calibrated to MCEVs
- In 2007 CFO Forum start work on formal “MCEV principles”

MCEV principles

- 17 Principles covering
 - Introduction
 - Coverage
 - MCEV definitions
 - New Business and Renewals
 - Non-economic assumptions
 - Economic assumptions
 - Disclosure
- Replaces EEV Principles
- Mandatory by end 2009

- Early adoption end 2008 initially announced by a number of CFO Forum members but credit crunch may have changed minds.

Market Consistent Embedded Value Principles – June 2008

CFOFORUM

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Main objectives

- Market consistency
- Further modeling guidance
- Improved disclosure
 - Increased transparency on methodology and assumptions
 - More consistency in analysis of results
 - Additional sensitivities
 - Group MCEV and reconciliation to IFRS net assets

Investor /analyst reaction to MCEV principles launch

- “We do not expect a step-change in the rating of the European insurers as a result of yesterday's announcement. However, we judge it a significant step in the right direction of what we expect/hope to be longer term convergence between IFRS, EV and Solvency II. Most of the large European insurers have already adopted MCEV, so we expect limited volatility in reported numbers. “ **KBW, June 2008**

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Components of MCEV

- Free surplus +
 - Required capital +
 - Value of in-force business
 - + Certainty equivalent present value future profits (CE PVFP)
 - (-) Time value of options and guarantees (TVFOG)
 - (-) Frictional costs
 - (-) Non-hedgeable risks
- } “Cost of capital”

Market consistency – detailed guidance

- Reference rate (Principle 14)
 - Swap rates preferred
 - No liquidity premia or credit risk premia
- Volatilities (G15.2)
 - Implied from market data, where available
 - Whole surface allowed for, where practical & material
- Correlations (G15.5)
 - Historical observations over relevant period
 - Stable approach over time
 - Checked if in line with competitors
- Testing for market consistency (G15.2)
 - Modeled fixed instrument asset cash flows
 - Martingale tests on convergence

Market consistency – but challenges remain

- The application of MCEV in the absence of deep and liquid financial markets poses significant issues in both developed and emerging markets
 - Yield curves
 - Derivatives
- The principles allow appropriate discretion to be used
 - Government bonds curves can replace swaps (G14.5)
 - Use of money market rates at short end swap curve (G14.2)
 - Use government curves to extrapolate swap curves (G14.1)
- On implied volatilities the use of expert opinion is allowed if “ there are concerns over the depth or liquidity of the market or if the market displayed unusual characteristics” (G15.3)

TVFOG – more focus on dynamic behaviour

- Principles seek to restrict judgement and improve disclosure
- Checklist of items to be considered in bonus strategy
 - Past application of discretion
 - Past external communication
 - Market practice regarding discretion
 - Smoothing strategy
 - Regulatory guidance and restrictions
 - All assets backing liabilities assumed to be realised
- Interaction with new business, eg on TVFOG
- Validation by management
- Policyholder behaviour expected to be modeled, where material

Cost of capital – a complex compromise

- Frictional cost
 - Applied to projected shareholder supported required capital only
 - Allowance for tax and investment expenses, but other potentially material frictional cost not modelled
 - Agency cost
 - Financial distress
- Non-hedgeable risk
 - Companies encouraged to develop a bottom-up view
 - Asymmetries in shareholder outcomes
 - Parameter risk / general allowance for volatility
 - Principles require expression as equivalent charge in top-down cost of capital approach for comparability
 - But significant differences are emerging between UK companies and continental European insurers

Operational assumptions

- Guidance on best estimate assumptions for mortality, morbidity and persistency similar to EEV
- Extensive guidance on expenses
 - Overheads, holding company expenses
 - Development expenses
 - Service companies
 - Pensions scheme deficits
 - Overruns
 - Marginal approaches
- Tax based on best estimate taking into account companies tax position and cash flows

Other discussions in CFO Forum

- Prescribed format earnings analysis
- What is the right unwinding rate?
- Choice impact on operating earnings

	Earnings on MCEV analysis			
	Free Surplus	Required Capital	WIF	MCEV
Opening MCEV				
Opening adjustments				
Adjusted opening MCEV				
New business value				
Expected existing business contribution (reference rate) ^{(1) (2)}				
Expected existing business contribution (in excess of reference rate) ^{(3) (2)}				
Transfer from WIF and required capital to free surplus				
Experience variances				
Assumption changes				
Other operating variance				
Operating MCEV earnings				
Economic variances				
Other non operating variance				
Total MCEV earnings				
Closing adjustments				
Closing MCEV				

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Comparing MCEV and EEV

- Positive and negative differences on in-force
 - Market-consistent FOGs instead of current FOG (+ or -)
 - (re-)investment returns reset in line with market (+ or -)
 - Derecognition of capitalised credit spreads (-)
 - Frictional cost & Non-hedgeable risk vs Cost of Capital (+ or -)

- MCEV earnings will be more volatile due to MtM accounting
 - Return on Free Surplus and Required Capital
 - Impact of ALM mismatch on liabilities, including Cost of Financial Options and Guarantees

- Value of New Business impact differs per product line
 - Impact analysed for product types on the following pages
 - This may ultimately have an impact on the business mix

Value of New Business impact –protection business

- Protection business
 - Value increases as profit margins are now discounted at lower rate
 - But could be offset if frictional cost and non-hedgeable risk allowance are significant

Value of New Business impact – variable annuities

- Variable annuities
 - Risk free fund growth rate and discount rate means that products where revenue is partially de-linked from fund performance should benefit
 - Products with high equity backing will suffer
 - GMxB will be valued at market cost

Value of New Business impact – fixed annuities

- Fixed annuities
 - MCEV does not recognise liquidity premia, credit risk premia or perceived manager out-performance
 - Products that rely for profitability on realisation of such spreads will decrease in initial profitability
 - Companies may try to mitigate the impact by assuming management discretion in bonus
 - But need to allow for policyholders response to any bonus cuts as well as competitor behaviour

Example – SP annuities in payment (UK)

10 year SP annuity in payment

		T	assets	reserve	EEV profits	EEV profile
Government bonds	3.00%	0	10,000	10,000		227
Corporate AA	6.00%	1	9,262	9,212	50	242
Historic default (*300%)	0.30%	2	8,430	8,384	46	256
Profit margin	0.50%	3	7,554	7,512	42	267
Current pricing rate	5.20%	4	6,633	6,595	38	276
		5	5,663	5,630	33	283
Single premium	10000	6	4,644	4,615	28	288
Annuity factor pricing	7.65	7	3,571	3,548	23	292
Annual annuity	1308	8	2,442	2,425	18	294
		9	1,255	1,243	12	295
EEV RDR	7.00%	10	6	-	6	296
Tax	0%					
	(for simplicity)	Sum			296	
		VNB			227	227
		VNB/APE				23%

- Product pricing based on corporate spread after allowance for default and profit margin
- Under EEV the projected 'real-world' margins are discounted at the shareholder required rate of return



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Example – SP annuities in payment (MCEV)

- Under MCEV assets are valued at market value and liabilities are discounted at the swap rate

		T	EEV profile	MCEV profile
Government bonds	3.00%	0	227	(875)
Swap rate	3.50%	1	242	(686)
Annuity factor valuation	8.32	2	256	(509)
Market value liabilities	10,875	3	267	(346)
Market value assets	10,000	4	276	(197)
VNB	(875)	5	283	(65)
		6	288	49
		7	292	144
		8	294	218
		9	295	269
		10	296	296
		Sum	227	(875)
		VNB	227	(875)
		VNB/APE	23%	-88%

- Expected profit margin are no longer capitalised and liabilities are discounted at a lower swap rate
- Instead of showing profits at issues this could result in zero or negative VNB with profit recognised as and when realised over time



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Example – SP annuities in payment (MCEV)

- Results: analyst expect the majority of the £700m annual VNB for annuities in the UK to **disappear** under MCEV
- Situation is made worse now that current long term swap rates are **close to or lower** than government bonds

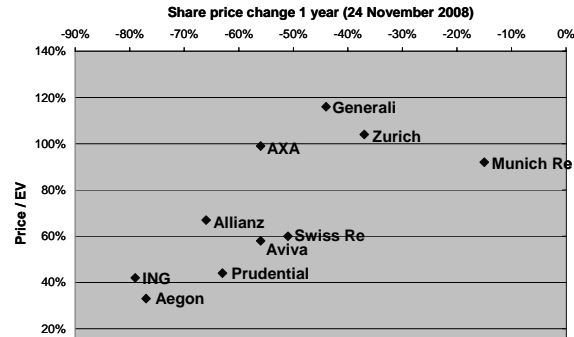
	3.00%	3.00%		10 yr swap rate 3.50%	10 yr swap rate 3.00%
Government bonds	3.00%	3.00%	T	EEV profile	MCEV profile
Swap rate	3.50%	3.00%	0	227	(875)
Annuity factor valuation	8.32	8.53	1	242	(686)
Market value liabilities	10,875	11,155	2	256	(509)
Market value assets	10,000	10,000	3	267	(346)
VNB	(875)	(1,155)	4	276	(197)
			5	283	(65)
			6	288	49
			7	292	144
			8	294	218
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			10	296	296
			Sum		
			VNB	227	(875)
			VNB/APE	23%	-88%

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Share prices to EV ratios

- Large European insurers have been trading well below their last published Embedded Value during a large part of 2008



- Embedded Value is a key disclosure, but at the moment other metrics are clearly judged more important by investors

Disclosure trends – back book management

- Increased disclosure on retention and expense management of the in-force portfolios

Back book management

Back book management

	HWPF				Pro forma	
	UK	Canada	Europe	TYOG	2007	2009
	£m	£m	£m	£m	Total £m	Total £m
Lapses	(277)	52	(24)	-	(249)	(266)
Mortality and morbidity	(47)	(48)	-	-	(95)	92
Tax	35	25	(4)	-	56	13
Deferred annuities	191	-	-	-	191	-
Other	34	(2)	4	42	78	133
Back book management	(64)	27	(24)	42	(19)	(31)

Active back book management

Source: Standard Life

Disclosure trends – fund management view

- A number of companies disclose AUM and a 'margin on assets' as part of their key performance metrics
- Pressure on use of MCEV for investment contracts

As margin on average assets (basis points)

Full Year 2007	Average Assets (£bn)	Operating revenue	Acquisition & Admin costs	Operating profit	Economic items	Other non-operating items	Profit before shareholder tax
UK	124.8	179	(121)	58	(9)	(1)	48
France	48.7	123	(73)	50	17	0	67
Netherlands	28.0	259	(206)	53	80	(2)	141
Other	40.6	275	(188)	87	(1)	(5)	81
Europe	118.1	211	(145)	66	26	(2)	90
North America	16.3	228	(165)	63	(112)	(35)	(84)
Asia Pacific	4.2	385	(311)	74	3	(2)	75
Total	263.4	200	(138)	62	1	(4)	59

Source: Aviva

Disclosure trends – liquidity

- Credit crunch prompted extensive new disclosures on cash and capital generation and new business pay-back periods

11. Maturity profile of Value of In-force (VIF) by proposition


As at 31 December 2007	Total	1-5	6-10	11-15	16-20
UK					
With-Profits Fund	322	149	105	42	18
Protection	242	125	82	21	10
Investments	157	70	46	22	11
Pensions	456	137	127	92	56
Annuities	7	2	2	2	1
UK other	76	29	32	15	-
UK total	1,260	512	394	194	96
		41%	32%	15%	8%

Source: Friends Provident

Future cash resources				
Release of UK value in-force over time				
	Total (£m)	1-5 yrs	6-10 yrs	11-15 yrs
Non profit ⁽¹⁾	2,748	54	24	10
With profits ⁽²⁾	790	54	28	10
Total	3,538	54	25	10

Value in-force = future cash	
■ More than half of VIF monies in 5 years	
■ Expected release:	
- £406m in 2007 post P5 06/14	
- Expect c10% growth in 2008	
■ Investing for future cash growth	
- Strain of £344m in 2007	
- 88 on new UK non profit business:	
- 14%	
- Non profit new business cash payback	
- 6 years	

(1) The group VIF includes the value of the long-term VIF contracts which are subject to capital release.
(2) The group VIF includes the value of the long-term VIF contracts which are subject to capital release.



Source: Legal & General

Disclosure trends - implied risk discount rates

- The implied discount rate (IDR) is the rate of discount such that a traditional embedded value for the business equates to the MCEV.
- A number of companies prefer IDRs as a way of communicating results

AXA - Additional Information about EEV

Full Year 2007

In %	Reference Interest Rate		Margin for Financial Risk		Time Value of O&G		Cost of Capital		PVFP Risk Discount Rate based on statutory earnings		Cash Flow Basis Effect		Total IDR based on distributable earnings	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
United States	5.34%	5.00%	2.58%	3.02%	0.64%	0.77%	0.74%	0.81%	9.30%	9.60%	-1.15%	-1.34%	8.15%	8.26%
France	4.29%	4.81%	2.17%	1.91%	1.97%	1.80%	1.39%	1.32%	9.82%	9.84%	-2.62%	-2.49%	7.20%	7.35%
United Kingdom	4.89%	4.84%	1.70%	3.21%	0.43%	0.30%	1.83%	1.72%	8.85%	10.07%	-2.51%	-3.15%	6.34%	6.92%
Switzerland	2.99%	3.95%	2.57%	1.85%	1.62%	1.69%	2.27%	1.98%	9.45%	9.47%	-3.99%	-3.65%	5.46%	5.82%
Japan	2.22%	2.25%	11.35%	7.54%	0.67%	0.47%	1.74%	1.03%	15.98%	11.29%	-6.39%	-3.42%	9.59%	7.87%
Belgium	4.26%	4.86%	3.30%	2.87%	4.61%	3.29%	1.63%	1.86%	13.80%	12.88%	-4.87%	-4.19%	8.93%	8.69%
Australia	6.40%	7.12%	1.40%	1.02%	0.19%	0.23%	1.07%	0.75%	9.06%	9.12%	-1.19%	-1.15%	7.87%	7.97%
Hong-Kong	5.28%	4.92%	0.53%	0.74%	1.43%	1.82%	0.55%	0.58%	7.79%	8.06%	-0.17%	-0.35%	7.62%	7.71%
Germany	4.26%	4.86%	1.95%	2.31%	0.67%	0.36%	1.28%	0.98%	8.16%	8.51%	-1.43%	-1.43%	6.73%	7.08%
Med Region	4.21%	4.74%	1.90%	1.18%	3.21%	2.75%	3.06%	3.35%	12.38%	12.02%	-5.77%	-5.49%	6.61%	6.53%
TOTAL Life & Savings	4.27%	4.83%	3.33%	2.80%	1.33%	1.20%	1.40%	1.27%	10.34%	10.10%	-2.77%	-2.48%	7.57%	7.61%



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Conclusions

- Calibration of financial risk to markets eliminates subjective management judgements
 - But less so in incomplete or stressed markets
 - Room for judgement moves to non-hedgeable risk
- MCEV principles: more than market-consistency
 - Raises the bar significantly on modelling
 - Enhanced disclosure requirement
 - But additional disclosure continue to be made
- Long term future of MCEVs disclosures remains unclear
 - Analyst remain sceptical
 - Overlap with IFRS Phase 2
 - Impact of the credit crisis on support for mark to market?



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Background to survey

- Objectives
 - gauge challenges in embedding Principles
 - areas of concern
- European industry
- Undertaken in July / August 2008
- 28 responses
 - 15 CFO Forum members
- Questions on
 - Methodology
 - Disclosure
 - Business impact
 - Implementation effort
 - Embedding

Respondents

CFO Forum

- AEGON
- Allianz SE
- Assicurazioni Generali
- Aviva
- AXA
- Munich Re/ ERGO
- Fortis
- ING
- Legal & General
- Old Mutual Plc
- Prudential PLC
- Scottish Widows
- Standard Life
- Swiss Re
- Zurich Financial Services

Current approach & support for MCEV

- Around two-thirds of all surveyed companies (and 57% of CFO Forum members) indicated that they had already moved to a form of market-consistent embedded value
- Most respondents (93%) were strongly supportive of the new MCEV Principles
 - Surprisingly no comments were received indicating reservations as a result of the market turmoil

Figure 1 | Is your current EEV approach market-consistent?

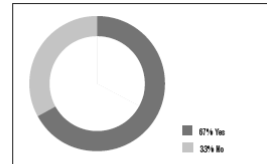
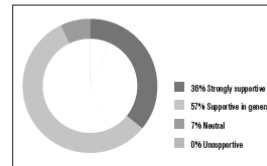
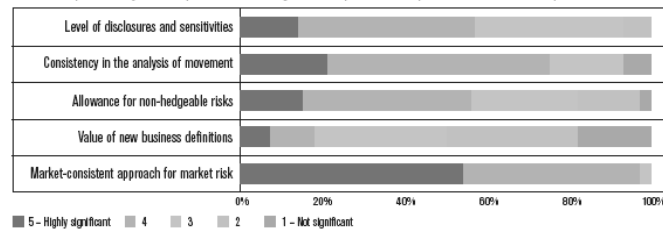


Figure 2 | What are your views on the new MCEV Principles?



Improvement over EEV?

Figure 3 | On a scale of 1 (not significant) to 5 (highly significant), please rank each of the following areas of the new MCEV Principles which you feel represent the most significant step forward compared to the old EEV Principles



- Market consistency seen as biggest step forward
- Least significant were
 - Relaxation of value of new business definition
 - Allowance for non-hedgeable risk

Disagreement on non-hedgeable risk allowance

- Significant differences are emerging between UK companies and continental European insurers
 - UK based insurers prefer a bottom-up approach and on average take a 1%-2% charge on non-hedgeable risk capital
 - Continental European insurers prefer a top-down approach and on average take a 3%-4% charge on non-hedgeable risk capital

Figure 5 | How do you set the level of non-hedgeable risks?

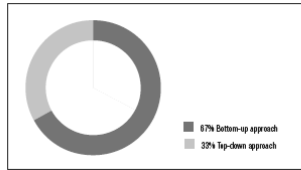
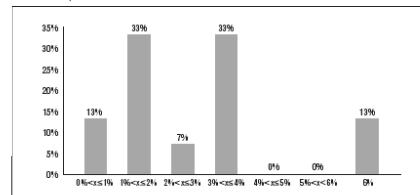


Figure 7 | What percentage charge have you calculated for the cost of non-hedgeable risk-based capital?



Disclosure

- 75% believe enough has been done to achieve convergence between company's disclosures
 - Earnings Analysis and the Group MCEV mentioned as most significant improvements
- Industry is sceptical on the ability of the MCEV principles to satisfy the investment community and only 32% think this will be the case

Figure 9 | Do you think that the new MCEV Principles have gone far enough to achieve convergence between companies on disclosures?

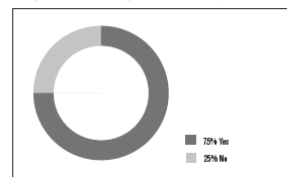
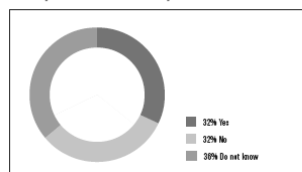
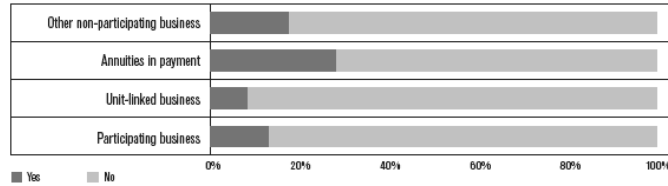


Figure 10 | Based on your knowledge do you expect the new Principles to satisfy the investment community?



Limited impact on pricing and products?

Figure 15 | Do you think that the new MCEV Principles will lead to a change in the pricing of your business?

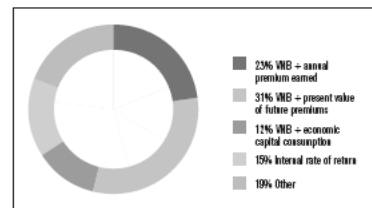


- Despite indicating significant impact of MCEV compared to EEV, most companies do not indicate a change in product strategy or pricing
- Exceptions include companies with significant annuity business

Impact of MCEV on pricing metrics

- Under traditional EV companies typically used IRR measures to set pricing hurdle rates
- Under MCEV
 - A number of companies continue with IRRs
 - Some use the market consistent VNB margin (VNB/APE) and set minimum standards
 - A significant minority expresses VNB as a percentage of capital consumed

Figure 20 | What is your principal product profitability measure?



Implementation effort

- Implementation effort indicated by respondents seem underestimated with only a few multinationals indicating more than 50 man days
- Companies already producing a market consistent EEV have a significant advantage

Figure 16 | How much time do you expect to spend (have you spent) implementing these modelling changes? (All companies)

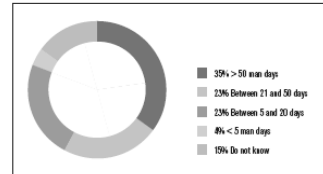
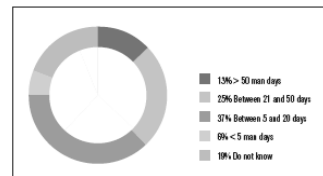
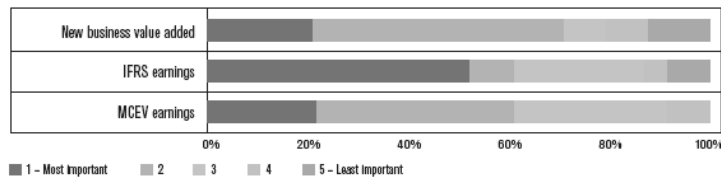


Figure 17 | How much time do you expect to spend (have you spent) implementing these modelling changes? (Companies that already produce an MCEV)



Significance of MCEV relative to IFRS

Figure 18 | Please rank the following measures of earnings/value creation in order of relative importance to your company management (all companies)



- Despite the popularity of EV accounting, most companies reporting IFRS still see this is the most significant reporting metric
- Nevertheless, 75% of companies indicated a link between management performance and published embedded value results

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