

# CFO Forum MCEV Principles

June 2008

On the 4th June 2008, the European Insurance CFO Forum published the Market Consistent Embedded Value (MCEV) Principles and associated Basis for Conclusions. This will represent the only CFO Forum endorsed method of embedded value reporting from 31st December 2009. The Principles represent a significant step forward in achieving more consistent MCEV reporting. This briefing note discusses some of the key changes made relative to the CFO Forum European Embedded Value (EEV) Principles and the practical conversion issues companies may face.



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## Introduction

This note is written by the Actuarial and Insurance Management Solutions team of PricewaterhouseCoopers and is intended for an actuarial and finance audience.

The CFO Forum published the EEV Principles and Guidance in May 2004 (with additional disclosure guidance in October 2005) designed to enhance embedded value measurement and reporting by making explicit allowance for options and guarantees and improving consistency of disclosures and sensitivities. At the time this represented a major step forward in the reporting of the CFO Forum members and other interested companies.

In more recent years there has been a move towards a market consistent embedded value approach, particularly amongst continental European insurers. Companies have however been able to maintain compliance with the EEV Principles despite the Principles not being written with this specific valuation approach in mind. Some observers however believe that there has not been sufficient consistency in approach and methodology adopted by those applying market consistent techniques. The variety in practices under EEV has unfortunately served to undermine confidence in the insurance industry with analysts calling for more consistency in approach and further disclosures on management assumptions.

For this reason and to improve convergence with other evolving accounting and regulatory frameworks, such as Solvency II and IFRS Phase II, the CFO Forum has published the MCEV Principles.

PricewaterhouseCoopers has been pleased to assist the CFO Forum in developing these MCEV Principles by providing project and technical support.

It is of course too early to judge the reaction of the analyst and investor community to the MCEV Principles, as they have yet to be applied, however it is clear that the level of consistency in implementation between companies will be crucial. The MCEV Principles do represent significant progress and address many of the criticisms levelled at the EEV Principles. It is worth noting that, in many situations, MCEV will provide a far more consistent metric across territories for insurance business than current IFRS reporting.

### Key areas of change

- Market consistency
- MCEV components
- Frictional costs
- Cost of residual non hedgeable risks
- New business and Renewals
- Disclosures
  - Analysis of MCEV earnings
  - Group MCEV
  - Requirement for audit review
  - Implied discount rates
  - Sensitivities

In addition there have been other minor wording improvements throughout the Principles.

## Market Consistency

Under traditional embedded value reporting asset arbitrage can impact the value of the shareholders' interest in the covered business. The assets backing the liabilities are projected allowing for asset specific investment margins over the risk free rate and consequently equities can appear more valuable than cash. In particular, the value of the business can increase when investments are switched into higher risk classes. The increase in value as risk increases was dealt with in the EEV Principles through the risk discount rate. However, arbitrage could still arise between product groups where an aggregate risk discount rate was applied. MCEV resolves this issue. In addition, the use of asset specific investment margin assumptions in EEV introduces a subjective assumption that caused additional difficulties when trying to compare two company's results. The trend in embedded value reporting as well as in other accounting and regulatory developments, particularly in Europe, has been towards a market based framework.

The MCEV Principles set out the requirements for economic assumptions, when performing a market consistent valuation, in Principles 12 to 15.

In calculating the value of in-force covered business ("VIF") the discount rates should be consistent with those that would be used to value such cash flows in

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the capital markets. In order to perform this calculation the Principles define the reference rate which is a proxy for the risk free rate, as the swap yield curve without adjustment for liquidity or credit premiums.

At present there is mix of approaches adopted by those calculating market consistent results with some companies using the swap curve and others using a government bond curve plus a liquidity margin. There are many potential definitions of the risk free rate. The Principles will therefore provide greater consistency in the practice adopted by companies and this would appear more important than trying to achieve a theoretically accurate risk free rate.

In calculating the time value of financial options and guarantees (“TVFOG”) the stochastic models used should be calibrated to the most recent market data available.

Volatility assumptions should be, where possible, implied volatilities derived from the market rather than based on historic information. The TVFOG along with the intrinsic cost of the options and guarantees included in the future profits should therefore represent the current market price of hedging the financial options and guarantees. Further guidance has also been added on the level of management discretion applied in calculating the TVFOG ensuring that own credit rating is not reflected in the

valuation. It is also clearer that management discretion is restricted by guarantees and legal constraints and that the discretion applied must be consistent with the projected economic environment and be supportable.

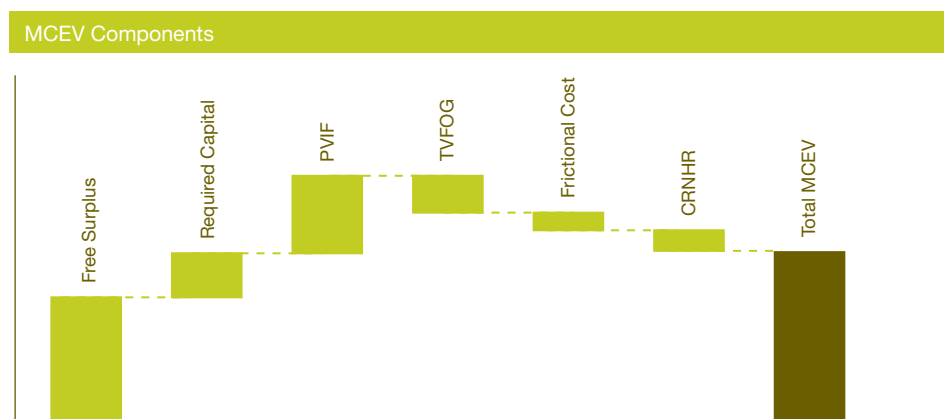
One of the consequences of MCEV reporting is therefore the potential for results to be volatile in turbulent markets. In particular the potential mismatch between the return along the swap curve and the performance on actual assets may contribute to large investment variances. UK style immediate annuities which are often priced on the assumption that the matching assets will provide a return above risk free rates can be subject to large investment variances if market credit or liquidity premiums change as has been seen recently. Furthermore the move to implied rather than historic volatilities may further increase volatility. This increased volatility will need careful explanation and may result in an increased focus from companies on operating earnings before economic variance.

The variances themselves may also come under greater scrutiny as companies’ hedging and asset liability management strategies receive greater analyst attention.

### MCEV Components

The Principles define MCEV as being composed of free surplus, required capital and the value of in-force covered business (“VIF”). VIF is made up of the present value of future profits (“PVFP”) less the TVFOG, frictional costs and cost of residual non hedgeable risks (“CRNHR”).

Free surplus is the market value of capital allocated to the covered business but not required to support it. Required capital however is the market value of capital allocated to covered business that is restricted. This should be at least the level of regulatory solvency capital but could be higher to take account of internal risk based capital objectives or rating agency capital.



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### Frictional Costs

The term frictional cost is often used within the industry to refer to any allowance for the cost of investing capital within a life company. Under EEV the term frictional cost of capital was used to refer to the allowance for risk made by discounting the return on capital at the risk adjusted discount rate.

Under the MCEV Principles, frictional cost has quite a narrow definition and does not include any allowance for risk. It is simply the taxation and investment costs on assets backing the required capital over the projection lifetime of underlying risk. It is not intended that agency costs or costs of financial distress should be included as these are regarded by the CFO Forum as general corporate risks.

The main practical implication of the frictional cost allowance is the resulting requirement to project the required capital. Where required capital is simply the regulatory solvency capital the functionality to project this may be within existing models. However, if a more risk based capital is adopted, projecting this may be more difficult and the Principles permit approximate methods such as running the capital off in line with key capital drivers.

### Cost of Residual Non Hedgeable Risks

Allowance for risk within MCEV reporting is one of the key technical and practical challenges. Under MCEV the allowance for risk is more granular than under the aggregate risk discount rate approach adopted by many companies under EEV reporting. However, this allowance can arise in a number of different places in the valuation including within the PVFP and TVFOG. For example, expense assumptions used in the PVFP may be based on historic experience that allows for the realisation of a certain level of operational risk occurrences and the projection therefore implicitly assumes that this level continues. Some companies model the impact of

dynamic policyholder actions within the TVFOG calculation and therefore an element of persistency risk is included.

The CRNHR therefore sets out to deal with the non hedgeable risks that are not covered elsewhere in the valuation. This allowance should cover both non hedgeable financial risks and non financial risks. In particular practical difficulties arise in allowing appropriately for financial risks in countries without active markets and this is an area where practice will evolve over time.

The CRNHR requires allowance for risks where the mean shareholder expected outcome is not reflected by the mean of the risk variable. This can happen, for

Allowance for risk – EEV versus MCEV	
EEV	MCEV
Margin in the risk discount rate used in the PVFP to cover a variety of risks	Hedgeable financial risk explicitly allowed for in the PVFP and TVFOG (and potentially some non financial risks)
Potential margins in the best estimate assumptions used in the PVFP to cover a variety of risk	Non hedgeable financial risk explicitly allowed for in the CRNHR
Asymmetry hedgeable financial risks explicitly in the TVFOG	Non hedgeable non- financial risk explicitly allowed for in CRNHR where these have not been directly modelled in the PVFP and TVFOG
Level of required capital	Level of required capital

## Allowance for risk within MCEV reporting is one of the key technical and practical challenges.

example, where there is non proportionate reinsurance or in a participating fund where the shareholder has to support the fund when minimum capital is eroded but only shares in a proportion of profits. It also requires allowance for risks not adequately allowed for in the PVFP or TVFOG.

In calculating the CRNHR companies are not required to charge for the uncertainty inherent within the insurance cash flows. Companies are however required to consider whether such a charge is appropriate or not.

The methodology for calculating the allowance for residual non hedgeable risks is not prescribed by the Principles however regardless of the method used, a single equivalent charge should be calculated using a cost of capital method and this should be based on an internal economic capital model. Diversification benefits within the non hedgeable risks of the covered business should be allowed for in assessing this single equivalent charge.

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## New Business and Renewals

The changes to the new business principle are not related to the move to MCEV, rather they are changes to address inconsistencies in the way companies currently report new business results under either EEV or MCEV.

The definition of what constitutes new business has not been amended from the EEV Principles. However the Principle has the following wording added to it.

The *value of new business* should reflect the additional value to shareholders created through the activity of writing new business.

This addition is included to ensure that where new business is written in an existing fund and where there are material interactions with existing business the value of new business reflects the value added by writing the business. It therefore calls into question the use of a proportionate approach whereby all policyholders (existing and new) are assumed to participate in the same investment return and therefore unrealised capital gains and losses (largely derived from the in-force business) are allocated proportionately to the in force and new business. Specific disclosure is required, where there are material impacts on value, related to interactions between new business and existing business.

There are a variety of approaches currently adopted in the market for the timing of the assumptions used in valuing the new business contribution reflecting managements' view of what the new business value is intended to show.

Some regard it as the value of new business expected to be achieved on start of year assumptions. Others regard it as the value expected to be achieved when the business is written (i.e. an indication of the intended margin), whilst others view it as the value added to the embedded value on end of period assumptions. The Forum has stated that assumptions at point of sale are the intended ideal, however, for practical reasons, such as the inability to update non-economic assumptions on a daily basis, companies are allowed to use other approaches as long as disclosure is made on the timing applied. We would expect most companies to use a point of sale approach for products that are sensitive to the economic climate at sale.

Additional clarity has also been provided on the value of new business specifying that it should be post tax, after TVFOG, frictional costs, non hedgeable risk costs and net of minority interests. Where a new business margin is calculated additional guidance on the required approach has been provided.

Expected return is shown in two parts, namely the return assuming assets earn the beginning of period reference rates and the additional return consistent with managements' expectations.

### Disclosures

There have been a number of key changes in the disclosures section of the Principles.

incorporates the covered business on an MCEV basis and the non covered business on an unadjusted IFRS basis. This will allow a better understanding of the total profit on all the business and

will provide a clearer picture of how the profits of the covered business relates to the IFRS profits. Again a standard template format is required.

### MCEV Analysis of Change

A standard MCEV analysis of change has been prescribed. This ensures that all companies show their movement analysis in a consistent format. Additional lines can be added to the analysis but only as subdivisions of the existing lines. The analysis splits movements down into free surplus, required capital and VIF. Expected return is shown in two parts, namely the return assuming assets earn the beginning of period reference rates and the additional return consistent with managements' expectations.

Opening and closing adjustments are restricted to foreign exchange variances, capital and dividend flows and acquisitions/divestitures.

### Group MCEV Analysis

A Group MCEV analysis has been included. The Group MCEV will provide a single metric, including non covered business, for insurance groups. Historically this has never been a requirement of embedded value reporting and is a clear improvement introduced by the MCEV Principles. The approach

Analysis of MCEV Earnings					
	Free	Surplus	Required Capital	VIF	MCEV
<b>Opening MCEV</b>					
Opening Adjustments					
<b>Adjusted opening MCEV</b>					
New business value					
Expected existing business contribution (reference rate)					
Expected existing business contribution (in excess of reference rate)					
Transfers from VIF and required capital to free surplus					
Experience Variances					
Assumption changes					
Other operating variances					
<b>Operating MCEV earnings</b>					
Economic variances					
Other non operating variance					
<b>Total MCEV earnings</b>					
Closing adjustments					
<b>Closing MCEV</b>					

### Requirement for External Review

Under the EEV Principles a statement was required where the method, assumptions and results were subject to an external review. The MCEV Principles however have been strengthened and now require a statement confirming that such a review has been performed.

### Implied Discount Rate

The implied discount rate is the discount rate that equates the traditional embedded value result to the MCEV result. It is used for a variety of purposes including comparing risk allowance between EEV and MCEV, comparing risk allowance between companies and to indicate the rate of cash generation from the embedded value. The MCEV Principles do not require that implied discount rates are disclosed, however if they are, then they should be based on cash flows net of required capital.

The method used to calculate the traditional embedded value and the assumptions used should be disclosed. There is no specific disclosure requirement on how the MCEV value translates to cash. However, the implied discount rates (where disclosed) and the improved analysis of MCEV earnings, for example, the expected return and the transfer from VIF to free surplus, is likely to provide useful related information.

### Sensitivities

Additional sensitivities have been added to cover equity and property implied volatilities, swaption implied volatilities and the level of required capital.

### Practical conversion issues

The technical aspects of an MCEV implementation, such as achieving market consistency and calculating the cost of residual non hedgeable risk can often override the more practical aspects of an implementation. Whilst these technical aspects are obviously important, ignoring the practical aspects of an implementation is likely to result in a difficult conversion.

### Business Wide Impact

An MCEV implementation project will cut across many different areas including Actuarial, Finance, Tax, Investments and Investor Relations.

Many key processes could be affected, including, but by no means limited to:

- Management reporting
- Group IFRS accounts (impairment tests, risk disclosures etc.)
- Forecasting and budgeting
- Performance measurement
- Customer relationship management
- New business product and initiatives
- Merger and acquisition activity

Gaining the necessary buy-in throughout the business will ensure that the support and non-actuarial technical skills needed are available from outset. As discussed below there are clear linkages with other reporting projects and MCEV should be implemented in a way that links in with these projects.

### Resourcing and Project Management

One of the key considerations is how the project will be resourced. Often key staff are already overloaded; adding more to their responsibilities may be counterproductive, reducing the quality of their ongoing work and of the project itself. Alternatives may need to be considered, such as the use of external support or reallocation of internal resources.

As well as identifying the resources to be used, the main deliverables will have to be agreed, project milestones identified and a project manager brought in to oversee the process.

### Communication

When considering how to communicate the impacts of the new methodology it can be useful to consider internal requirements separately from external requirements. Internally, there will be a need to educate users on the new MCEV management information and how it differs from previous measures. External communication is one of the most

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important aspects of a successful MCEV implementation. Implementing a robust, defensible methodology which is then poorly explained and communicated to analysts will destroy the potential value that a well-communicated conversion or adoption could create.

Clarity and openness are important as well as the robustness of the methodology. For firms moving from non market-consistent EEV to MCEV and for first time implementers, explanation of why there are changes in methodology and the financial impact of these changes will need to be provided to the users.

### Exploiting Synergies

Implementation of MCEV is likely to require development work to existing deterministic and stochastic models. The next five years will also potentially see further development of IFRS Phase II for insurance contracts and in Europe, the implementation of Solvency II.

Considering any possible synergies between these three risk-based capital, market consistent measures may enable companies to identify where there are similarities in methodology and data requirements. Exploiting such similarities may then remove the need for separate models and processes and reduce the extent of the development work required.

Looking beyond these areas of “traditional” actuarial modelling, is perhaps where most value can be added however. Many existing financial reporting processes have evolved over a period of years and are cumbersome and unwieldy, relying heavily on manual intervention and spreadsheet-based processes. Implementation of MCEV could be an opportunity to refine and improve the systems and processes used to consolidate and analyse results.

### Conclusion

Implementing MCEV will therefore be a challenge. It will take considerable investments of time and resource. However the benefits of such an implementation should outweigh the difficulties. In particular benefits will be gained in achieving a market consistent valuation approach and exploiting synergies with IFRS Phase II and Solvency II. The introduction of the MCEV Principles is clearly a step towards achieving greater consistency and comparability between insurance companies. However only time will tell whether the market recognises this and begins to understand the sector a little better thereby leading to a reduction in the “haircuts” in value traditionally applied by analysts. In implementing MCEV, each company will face different problems. Remember, however, the

practical side of the implementation and the control process for the changes are vital – technical skills will not be enough.

Copies of the CFO Forum MCEV Principles and the associated Basis for Conclusions can be obtained from the CFO Forum website at:

<http://www.cfoforum.nl/eev.html>

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