



**The Israeli Committee for the
Determination of Embedded
Rules and Guidance**

Embedded Value Rules
and Guidance

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1. BACKGROUND AND INTRODUCTION

1.1 Background to the rules and guidance

On 9 May 2006 the Commissioner for Capital Markets, Insurance and Savings (the “Commissioner”) circulated insurance circular 2006-1-8. This circular states his intention to require the disclosure of embedded values (“EVs”) by Israeli life and health insurance companies in the Directors Report.

In discussions, the Commissioner explained that the requirement for companies to publish embedded values is part of a wider process to establish a risk, capital and value framework within the Israeli insurance industry.

The Commissioner set up an industry-wide working party (the "Committee") that is responsible for submitting the recommendation of rules and guidance for calculating EVs. The potential number of the members who may have an interest in the outcome is large. These include the Chief Actuaries of the insurance companies, Chief Financial Officers, Chief Risk Officers, Auditors and representatives from the insurance commissioner office and the Israeli Securities Authority.

This document contains the Committee’s recommendation to the Commissioner, for EV rules and guidance for all companies to comply with. It has been prepared in conjunction with Tillinghast, the Committee’s consultants following detailed consultation. Neither the Committee nor Tillinghast accepts any duty of care to the users of these EV rules and guidance.

The Committee is intending to continue its activities and may suggest additions or changes to these rules regarding issues which are still open or not yet addressed in this document.

1.2 Background to embedded values

The forerunner to embedded values was Jim Anderson’s 1959 methodology paper, which argued for a shareholder valuation and pricing method based on projecting future cash flows using best estimate assumptions, and discounting the emerging surpluses using a

risk discount rate reflecting the shareholders' required rate of return and the degree of risk in the business being valued.

In more recent years, the key developments in embedded values have been:

- Increasing acceptance of EVs as the most robust measure of shareholder value for life insurance business.
- The construction of computer models, allowing companies to value large portfolios of business within a relatively short time frame.
- The development of analytical tools showing the drivers of the change in EVs over time.
- Public reporting of EVs. EV-based reporting has become widespread in Europe, South Africa, Australia and Canada. It is gaining ground in Asia.
- A gradual move towards defined standards. In the UK, the insurance trade body (the ABI) developed EV guidance in the 1990s, and in 2004 the CFO Forum published the European Embedded Value ("EEV") Principles and Guidance.
- The widespread use of EVs by company management to measure performance, and as a basis of remuneration.

1.3 The case for embedded values

The main advantages of the EV method are as follows:

- EV recognises shareholder value creation in the correct time period. In particular, it recognises profit at the point of sale and the expected impact of experience changes as the events occur.
- EV methodology gives a robust basis for pricing new business that allows the recognition of the Value of New Business ("VNB") at the point of sale.
- Analysis of the change in EV over a period gives insights into the drivers of operating performance and the impact of management actions.
- Analysis of the sensitivity of the EV to changes in assumptions helps to indicate the materiality of the key risks the company is exposed to and focus the attention of

management. The sensitivities can be used at a later stage as an input into economic capital requirements.

- The EV framework provides a full balance sheet value including both the net assets and the value of in-force business (“VIF”). Unlike many other industries, the VIF can be a significant component of the overall life insurance company value.
- For EV reporting, disclosure of the methodology and assumptions, as well as sensitivity information, helps analysts to form their own views of the value of a life insurance company.
- EV provides an early indicator of operating performance. Under regulatory or GAAP reporting, the profitability of new business is hidden and the impact of changes in experience is smoothed over a long period.
- Analysts can use EV to compare performance in different countries on a comparable basis because EVs are less dependent on any particular country’s regulatory reporting standards.

1.4 Aims of Israeli EV Rules and Guidance

The Israeli EV Rules and Guidance aim to:

- Set out the minimum standards that Israeli companies must adhere to when calculating and publishing EV.
- Provide guidance to help companies implement the rules.
- Provide a rationale for the rules and guidance.

The Israeli EV Rules and Guidance deliberately do not cover all aspects of EVs. In particular, they do not cover the following:

- The actual assumptions required under EV, where these by nature are company specific and are likely to vary over time.
- The actual calculation formulae required under EV.
- The choice of modelling system used to calculate the EV.

1.5 Structure of Israeli EV Rules and Guidance

The rules and guidance structure is as follows:

- Rules paragraphs are in **bold** and boxed.
- Guidance paragraphs are in *italics*.

Rules are compulsory to the extent that not following a particular rule or set of rules may result in the materiality limits set in Section 14 being breached.

Rules have been determined on the basis that they should be objective and auditable. It will be a requirement to abide by all relevant rules whenever practicable – if a rule is not followed, then companies will be required to disclose the fact clearly.

Guidance is meant to describe recommended best practices, but is not compulsory.

1.6 Implementation approach and next steps

The Israeli EV Rules and Guidance have been written recognising the desire of the working party to publish EVs based on fully implemented liability models from the first date of publication. This is provisionally set to be May 2008, following the 2007 year end, in order to allow companies a reasonable timeframe to implement all the rules set out in the Israeli EV Rules and Guidance and to avoid the need to make modelling simplifications, which may have to be undone at a later stage, in order to meet an accelerated timescale. It is intended that the 2008 publication will comprise the 2007 EV and VNB and from 2009 the analysis of movement of the EV will also be published.

In addition, companies are required to prepare the 2006 EV based using these rules and guidance (if they are accepted by the regulator) by the end of 2007. The 2006 results will not be published, but will be presented to the board of the company, and perhaps to the Commissioner if he so requests.

1.7 Non-completed items and open decisions

- The Committee has recommended including pension fund and asset management (at least kupot gemel) business within the EV. The principles and technical issues regarding this have not been directly addressed in this document, although we believe

that in principle this document applies adequately to this business without modification. The issue of timing of the inclusion of this business has yet to be resolved since it is not certain that all companies can perform the appropriate calculations for this business by the end of 2007.

- Companies have stated that they require legal protection (safe-harbour) for the company and the officials signing off on the EV, since it may be interpreted as forward looking information that can be used by the investing public in order to make investment decisions, hence exposing these parties to a risk. The Committee has asked the Commissioner for help in this regard.
- The Committee recommends that the EV publication is signed by the actuary (or actuaries) responsible for preparing the EV together with the signatories of the financial statements. In Europe it is common that the directors sign the publication. The Committee does not have a unanimous view on this and leaves it to be settled between the industry and the Regulator.
- The scope and frequency of any audit or review, whether any such review should be mandatory, and any restrictions regarding who can or cannot perform a review are all open issues to be settled between the industry and the Regulator.
- The Committee recommends preparing a glossary of EV related terms in Hebrew, in order for there to be standard terminology used in EV publications, with agreed definitions.
- There are complex issues regarding the publication of the EV at the level of a holding company. The Committee recognises the fact that in most cases in Israel the insurance companies are subsidiaries of a public holding company that may have to include the EV information with its own financial statements, even though the Regulator's circular on EV does not fall on holding companies.
- This document has to be translated into Hebrew.

2. DEFINITIONS

2.1 Introduction

Embedded value publications by companies tend to use EV balance sheets and VNB presentations which are broadly similar but on occasion contain significant differences. Whilst these differences may in some cases be only presentational, a common presentation of the results will aid comparability across the Israeli life insurance industry.

2.2 Definitions

Ref 2.2.1

The EV consists of the following components:

- **Adjusted Net Worth (ANW), which is the reported amount of the Shareholder Equity of the company in which the Covered Business is written, less intangible assets related to the Covered Business (see chapter 5); For a holding company that is publishing EV information in respect of its subsidiary, the ANW is based on the consolidated Shareholder Equity adjusted for the value of consolidated intangible assets related to the Covered Business.**
- **Value of In-Force Business (VIF), which is the present value after taxation of future shareholder cash flows projected to emerge from the Covered Business in-force at the valuation date after:**
 - **Allowance for the time value of financial options & guarantees (EVFOG)**
 - **Allowance for cost of capital (EVCoC)**

Unadjusted VIF is defined as VIF before EVFOG and EV CoC

Ref 2.2.2

The Value of New Business (VNB), is the present value after taxation of future shareholder cash flows arising from New Business written during the reporting period immediately prior to the valuation date, adjusted for:

- **Impact of the time value of financial options & guarantees (NBFOG)**
- **Impact of the cost of capital (NBCoC)**

Unadjusted VNB is defined as VNB before NBFOG and NBCoC.

3. COVERAGE

3.1 Introduction

For EV reporting, there should be a clear definition of the business that has been included and the business that has been excluded from the EV calculation. This ensures that all parties who use the results understand what the EV represents. If senior management, analysts and other users of EV information understand the exact nature of the business underlying the EV result they are in a better position to understand the result itself.

The business covered by the EV and VNB calculation is termed the “Covered Business”. This is described in more detail below.

3.2 Definitions

Ref 3.2.1

Covered Business should include both life insurance and health insurance business as classified within regulatory reporting. All such business in force at the valuation date should be included. Short term business such as group life and health business as well as long term business should be included in the EV projections provided it falls under the Covered Business insurance category.

Short term (up to one year) individual business should not be included in Covered Business, even if it is classified as life or health insurance.

Current examples of lines of business which fall outside the definition of Covered Business are personal accident and travel insurance.

The separation of insurance business between Covered Business and other business should be consistent with that already used within regulatory reporting.

Ref 3.2.2

Business that does not fall into the life insurance or health insurance category should not be included within the Covered Business EV.

Such business may be valued on an EV-type basis but should be reported separately. An example of where this might apply is unit trust business. The Israeli EV Rules and

Guidance are mandatory only for the Covered Business. If other business is valued and separately reported on an EV-type basis, it should be disclosed whether the approach follows the Israeli EV Rules and Guidance; if not, details should be provided of the methodology and assumptions.

Ref 3.2.3

At the corporate (group) level, the EV will cover all life and health insurance subsidiary companies within the group, including overseas subsidiaries. Other subsidiaries will also be included within the ANW component of the EV if, and in the same way in which, they are included in the Shareholder Equity (i.e. Shareholder Equity on a consolidated basis).

4. ALLOWANCE FOR RISK

4.1 Introduction

A key aspect of embedded values is the methodology for allowance for risk. A robust methodology provides much more useful information to management and the outside world. Different methodologies can lead to very different results.

This Section provides rules and guidance on the need to ensure an appropriate allowance for risk and the features required by the allowance for risk methodology.

4.2 Allowance for risk

Ref 4.2.1

At each valuation date, the embedded value must make sufficient allowance for the aggregate risks in the business being valued. The allowance for risk should be based on market-consistent embedded value principles.

All financial options/guarantees should be valued using either market prices or a stochastic market-consistent approach, consistent with market-consistent embedded value principles. A requirement for the overall EV and VNB to be market-consistent is for financial options and guarantees embedded in the portfolio to be valued in a manner consistent with how those financial options and guarantees would be valued in the market. This approach is recognised by the international analyst community to provide the most robust, best practice allowance for risk.

Section 9 provides details regarding the approach to the allowance for risk for financial options and guarantees.

4.3 Principles of market-consistent embedded value

Ref 4.3.1

The allowance for risk approach should follow the following principles:

- **No arbitrage - if two assets or liabilities have exactly the same cash flows in all possible circumstances, then they should have the same present value at the valuation date.**
- **Market prices - the valuation of both assets and liabilities should be consistent with unsmoothed market information as at the valuation date, in particular asset index levels, risk-free yield curves and the market price of traded options.**

The above principles mean that the allowance for risk should be set at a granular level. In particular the allowance should be:

- *Company-specific not industry specific*
- *Product-specific*
- *Value of new business-specific*
- *Reassessed actively at each valuation date*

These rules could not be adopted if the Working Party adopted a “top-down” approach (e.g. WACC) to the allowance for risk which has been used by a number of companies who have followed the EEV principles.

5. VALUATION OF ASSETS AND ADJUSTED NET WORTH

5.1 Introduction

A key component of the embedded value balance sheet is the adjusted net worth (ANW). All assets (net of liabilities) not allocated to the Covered Business regulatory reserves should be included in the ANW calculation. Due to the potential large amount of work required to restate all these assets to market value, and the subjectivity regarding certain illiquid assets, the Working Party proposes to include these assets at their accounting value (subject to any adjustments outlined in the Rules and Guidance). The Working Party notes that changes in International Accounting Standards may eventually result in all the net assets of the company being account for on a market value basis.

This Section therefore sets out rules and guidance on how to calculate the ANW and the valuation of assets backing the regulatory reserves of Covered Business and other net assets. This Section is structured as follows:

- Definition of ANW
- Identifying the tangible assets allocated to Covered Business
- Valuation of Company Net Assets
- Treatment of assets whose value may be captured in the EV or VNB
- Valuation of the tangible assets allocated to the regulatory reserves of Covered Business
- Valuation of the regulatory reserves allocated to the Covered Business
- Global reserves and provisions
- Treatment of subsidiaries
- Consolidation and intra-group arrangements
- Financial reinsurance and debt
- Reconciliation to primary accounts.

5.2 Definition of ANW

The ANW is defined in Section 2.2.

5.3 Identifying the tangible assets allocated to Covered Business

Ref 5.3.1

In order to calculate the ANW of the Covered Business, companies are required to identify all the Net Assets of the company (the “Company Net Assets”). Where there is a pre-defined split, companies should segregate the Company Net Assets between those backing the Covered Business and those backing the remaining business written by the company. Currently, in Israel, there is not a pre-defined split, and therefore the ANW will include the total Shareholder Equity of the company (with adjustments as specified in the EV Rules and Guidance).

This is to ensure that the valuation of the Net Assets allocated to Covered Business is appropriate within the EV. In Israel, it is not possible to segregate the Net Assets within the relevant company into those allocated to Covered Business and other business, therefore the disclosure should make clear that the ANW is of the total company and not just the Covered Business. In such circumstances all the Company Net Assets should be valued using the Israeli EV Rules and Guidance Where an alternative approach to defining the ANW of composite companies emerges as best practice then consideration will be given to amending the rules and guidance to reflect this.

5.4 Valuation of Company Net Assets

Ref 5.4.1

Company Net Assets should be valued using the value placed on them in the accounts subject to the adjustments described in this Section. Where any assets are valued at other than market value then this must be disclosed.

5.5 Treatment of assets whose value may be captured in the EV or VNB

Ref 5.5.1

Where the value of certain assets is already included in the calculation of the VIF or the VNB, then the value of these assets should be excluded from the ANW calculation.

Examples of adjustments include the following intangible assets:

- *Books DAC*
- *any “PVIF” asset in respect of Covered Business. (PVIF in this respect is used as an IFRS term not an EV term.)*
- *any asset in respect of future new Covered Business. Regarding this example, it is recognised that this adjustment may lead to an immediate EV loss when a company acquires a new subsidiary or portfolio and an element of the purchase price represents future new business value which cannot be recognised in the EV balance sheet. Such inconsistencies should be appropriately explained and disclosed in the EV publication.*

5.6 Valuation of the tangible assets allocated to the regulatory reserves of Covered Business

Ref 5.6.1

Tangible assets allocated to the regulatory reserves of Covered Business should be valued using market value or, where market values do not exist, an estimate of market value.

For assets where there is a regularly available market price, companies should use the market price. For this purpose, market price is defined as mid-price, the mid-point between bid and offer price.

For assets where there is no regularly available market price, companies should estimate the market value. The methodology used to estimate the market value should aim to ensure that if the company were to purchase the asset on the valuation date, the estimated market value should materially equal the price that would have been paid at that time for purchase of a similar traded asset.

Where relevant, the methodology used to estimate market value should be consistent with valuing non-traded assets in the Participating Portfolio of the company.

Special government bonds (“chetz”) allocated to the reserves of Covered Business should not be re-valued at market-value, but should be kept at the same value at which they are reported in the financial statements.

The estimated market value may be calculated using a simplistic value measure if appropriate (for instance the ratio of price to earnings) or a more sophisticated model (a mark-to model approach).

When using any mark-to-model valuation, companies should ensure that the model and its parameters are appropriate for the asset being valued. It would not be appropriate for the model to be used to give a mark-to-model result for an asset on the day of purchase significantly different to purchase price.

The valuation of untraded assets should take account of any hidden features of the asset contract, in particular features which are derivatives.

There is a risk with untraded assets that a mark-to-model approach ignores features of the contract which may have a material impact on value, for example derivatives embedded within convertible bonds. Such features can have a significant impact on the value of the contract, either at the valuation date or in future if market conditions change.

The valuation of tangible assets need not consider the impact of taxation or investment expenses that the company may incur on those assets.

For other assets, it may be that the existing valuation in the primary accounts is sufficiently appropriate to be deemed an estimate of market value.

5.7 Valuation of the regulatory reserves of Covered Business

Ref 5.7.1

The methodology and assumptions used to value the regulatory reserves in the calculation of the VIF and VNB should be the same as that used in the Israeli reserving calculation applied at the valuation date for the purposes of determining regulatory solvency. The reserves used in the calculation of the VIF should therefore be directly reconcilable to those used in the calculation of regulatory solvency. For this purpose, the regulatory reserves should not include any regulatory or other capital requirements deemed to be required in addition to the regulatory reserves.

Such additional capital requirements are referred to as “Required Capital”. Rules and guidance regarding the Required Capital and its associated cost are set out in Section 6.

Any credit in respect of the assumed release of margins within these reserves would be expected to emerge in the VIF, as described in Section 7.

5.8 Global reserves and provisions

Ref 5.8.1

The ANW should be calculated net of any global reserves and provisions which are included within the regulatory reserves of Covered Business.

Global reserves refers to reserves which are required to be held for regulatory purposes which cannot be attributed to any one particular policy. A list should be made of such global reserves and provisions, together with their level at the valuation date for use in the calculation of the VIF.

Currently there are no regulatory global reserves or provisions under Israeli reporting practice for Insurance companies.

5.9 Treatment of subsidiaries

Ref 5.9.1

If material subsidiaries are assets of Company in which Covered Business is written, an appropriate valuation of such subsidiaries should be determined.

Subsidiaries which write Covered Business should be valued in accordance with the Israeli EV Rules and Guidance. However, the publication of the EV may be performed at the group level, and disclosure of the EV for individual subsidiaries is not required.

Other subsidiaries should be valued in accordance with current accounting rules, such that there is no change in their value compared to that reported in the parent company's financial statements.

5.10 Consolidation and intra-group arrangements

Ref 5.10.1

The calculation of the ANW should eliminate distortions that could arise from any intra-group arrangements.

5.11 Debt and financial reinsurance

Ref 5.11.1

The Company Net Assets should be valued after the deduction of the market value of any debt and loans secured against future surplus emerging on Covered Business. If market value is not available, a value consistent with the market value of debt with similar characteristics should be used.

Characteristics such as the outstanding term, coupon and credit rating should be considered when assessing the market value of the debt on loan.

Ref 5.11.2

The valuation of subordinated debt should also be calculated using market value, or where not available, a mark-to-model value.

Ref 5.11.3

Where financial reinsurance has been secured against the future surpluses arising from the Covered Business then the market value of the liability to recapture the financial reinsurance should be deducted from the tangible assets allocated to the Covered Business.

If a market value is not available to value the financial reinsurance, one of the following alternatives should be used:

- *a value consistent with the market value of debt with similar characteristics, or*
- *a value should be determined equal to the difference between a mark-to-model value of the cash flows with the financial reinsurance and a mark-to-model value of the cash flows without the financial reinsurance.*

Financial reinsurance (also known as “Mod-Re”) and debt can cause a leveraging effect on EV. If such features exist within a company, this effect should be allowed for explicitly within the allowance for risk within the EV calculation.

Ref 5.11.4

The Company Net Assets should be valued after the deduction of other debt and loans (not secured against future surplus emerging), at their accounting value.

5.12 Reconciliation to primary accounts

Ref 5.12.1

A reconciliation between the ANW and the Israeli GAAP primary account valuation should be prepared and disclosed. This reconciliation should explicitly list all the material adjustments required to get from the primary accounts of the insurance company to ANW and the value of the adjustments at the valuation date.

This reconciliation should act as a check that the value from the assets attributable to the Covered Business is counted only once. Examples of material adjustments include the intangible assets as described in Section 5.5. All immaterial adjustments may be grouped under a single heading.

6. REQUIRED CAPITAL AND THE COST OF CAPITAL

6.1 Introduction

This Section sets out the rules and guidance for the calculation of the Required Capital and Cost of Capital and is structured as follows:

- Definition of Required Capital
- Cost of Capital
- Modelling projected Required Capital

6.2 Definition of Required Capital

Ref 6.2.1

Required Capital is the amount of capital required to be held in addition to regulatory reserves in respect of the Covered Business. The level of Required Capital must be no less than that prescribed by Israeli regulations for Covered Business on a standalone basis or any other legal restrictions that prevent its distribution.

Required capital applies to:

- *The in force business, when determining the EV*
- *The New Business written in the reporting period prior to the valuation date, when determining the VNB.*

It may be the case that insurance companies choose to hold Required Capital in excess of that prescribed by the regulators. This could occur for various reasons, for example a desire to achieve a certain credit rating.

Where the Required Capital has been reduced via the use of reinsurance, the Required Capital is the amount after allowing for the effects of this item.

6.3 Cost of capital

Ref 6.3.1

The cost associated with holding Required Capital, known as the “cost of capital”, should be explicitly allowed for as a reduction in the VIF and the VNB. The cost of capital is defined as the difference between the face amount of Required Capital at the valuation date and the present value of future releases of that capital, allowing for the future investment return on the Required Capital, future taxation arising from holding that Required Capital and investment expenses relating to assets backing that Required Capital.

The rate of future investment return and discount process should follow the rules set out in Sections 7 and 10.

The cost of capital is defined in Section 2 as EVCoC for the EV and NBCoC for the VNB.

6.4 Projection of Required Capital

The cost of capital is a function of the size of the capital held, the length of time it is held for and the cost per unit of capital held. The capital is held as a buffer to ensure that payments resulting from claims on the in-force business can be made with confidence. It is therefore appropriate to run-off this capital at a pace commensurate with the run-off of the business.

Ref 6.4.1

The timeframe chosen to run off Required Capital for the purposes of determining the EVCoC should be consistent with the term of the Covered Business.

The timeframe chosen to run off Required Capital for the purposes of determining the NBCoC should be consistent with the term of the New Business.

The run off of Required Capital requires a model of projected Required Capital, starting from the level of capital required at the valuation date. It may be that projected Required Capital is expected initially to increase (compared to Required Capital) after the valuation date before running off – if so, this should be allowed for in the model.

The projected Required Capital should be based on the calculation of the Required Capital at the valuation date, but may be simplified where this does not materially affect the cost of capital calculation. Ideally, the projection of Required Capital should be calculated by identifying the formula which defines Required Capital as a function of other variables; this formula will contain variables which vary by time (e.g. level of basic reserves or Books DAC) and variables which do not vary by time (e.g. the percentage of basic reserves feeding into the Required Capital formula). The calculation of the projected Required Capital can be based on applying this formula to the projected variables.

Global amounts that form components of the Required Capital, that are direct functions of any measure, such as premium or sum-at-risk, should be split where possible by the nature of the capital requirements and projected as a constant proportion of an appropriate global measure.

Global amounts that form components of the Required Capital, that are not direct functions of any measure, should be split using an appropriate approach which the Committee determined to be to divide the capital requirement into two equal amounts at the valuation date, and each amount should be projected forward as a constant proportion of the projected premium and projected reserves respectively.

Similarly, regulations that specify a floor to any component of Required Capital, such as the floor relating to the amount of the extraordinary risk reserve held by a company as at 31.12.2006, can be ignored when projecting required capital, since these regulations relate in principle to a company continuing to write new business, whereas the EV calculations apply only to business in-force at a particular date, but with certain underlying assumptions reflecting a company open to new business.

Where certain projected variables are not readily available from the projection model (as described in Section 7) then an additional projection of that metric is required. For example, a projection of the Books DAC may not be required in the projection model calculation of Unadjusted VIF, but is required to determine projected Required Capital.

Ref 6.4.2

Where the Required Capital is reduced from its gross amount via the use of reinsurance then credit for this reduction can be taken into account in the projection of the Required Capital for the period over which the arrangements leading to the reductions are expected to remain in place.

Where the effect of reinsurance of the policy liabilities leads to a reduction in the Required Capital, then credit for this reduction can be taken consistently with the assumed period of reinsurance in the VIF or VNB calculation.

Ref 6.4.3

Where the level of Shareholder Equity required to support the Required Capital is reduced via the use of financial engineering, then credit for this reduction can be taken into account in the projection. The projected Required Capital can be reduced by the amount of benefit the financial instrument has on Shareholder Equity for the period over which the arrangements, including likely renewals or replacements, leading to the reductions are expected to remain in place.

“Financial Engineering” in the above rule refers to means used to reduce required capital, such as subordinated debt. Where companies use subordinated debt to reduce Required Capital, then credit may be taken for the effect that debt has on reducing the level of Shareholder Equity required to support Required Capital (credit would normally be taken through the reduction of the cost of capital). For modelling purposes, this may be reflected by reducing the level of Required Capital projected by the amount of additional regulatory capital the subordinated debt provides. Companies are permitted to assume that following the redemption of current subordinated debt then a debt instrument with equivalent characteristics would be raised in its place provided, under current market conditions, no more favourable terms could be secured.

7. VALUE OF IN-FORCE BUSINESS

This section provides a definition of the VIF before adjustment for the EVCoC and EVFOG, which are covered in Sections 6 and 9 respectively; for brevity this is referred to as the “Unadjusted VIF”.

The published EV will be based on market-consistent embedded value principles. This includes the use of the certainty equivalent approach (defined below), which broadly satisfies these principles for all cash flows without embedded financial options and guarantees.

This section sets out the rules and guidance for the calculation of the Unadjusted VIF and is structured as follows:

- Definition of Unadjusted VIF
- The calculation of Unadjusted VIF
- Definition of in-force business
- Calculation methodology for global provisions.

7.1 Definition of Unadjusted VIF

The Unadjusted VIF arises because the ANW component of the balance sheet is prudent and so margins are expected to arise in future from the in-force business.

Ref 7.1.1

The Unadjusted VIF is the present value, after taxation, of future shareholder cash flows projected to emerge from Covered Business in force at the valuation, before allowance for EVCoC and EVFOG.

7.2 The calculation of Unadjusted VIF

Ref 7.2.1

The Unadjusted VIF should be calculated using a certainty-equivalent approach.

This is defined as follows:

- **The gross projected market related investment return assumptions for all asset classes should be set equal to the gross risk-free rate as described in Section 10, except for the special government bonds (“chetz”) for which the investment return should be set according to their guaranteed yield.**
- **Projected tax and investment expense rates on these investment returns should be set equal to expected tax and investment expense rates (expressed as a percentage of return) given the actual asset mix of the business.**
- **Projected after-tax shareholder profits should be discounted using the gross risk-free rate.**
- **All non-economic projection assumptions should be set equal to best estimates, as described in Section 11.**

The certainty-equivalent approach automatically allows for the intrinsic value of financial options and guarantees but not the time value of financial options and guarantees. Therefore the EVFOG item of the balance sheet is also required - the valuation of this item is described in Section 9.

The projection of the proportion of assets invested in special government bonds (“chetz”) should take account of the total expected term of the existing and future bonds backing in-force Covered Business. In other words, the valuation should allow for the promise in the law to issue new bonds at known terms if reserves grow, or when existing bonds mature, as well as to the expected early redemption of the bonds based on the projected runoff of the reserves, rather than to the “nominal” date at which the existing bonds will technically mature.

There are certain investments that earn a higher investment return than other assets with an equivalent risk profile because of higher expenses or profit margins. This situation can

exist in an inefficient market, which currently exists for assets such as mortgages and policyholders loans. For these assets, allowance can be made in the EV by increasing their assumed investment return by the difference between the interest rate earned on the loan and the market interest on other loans or bonds with an equivalent credit rating (or by another indirect but equivalent method). Where the value of the additional margin is material, this should be disclosed.

Ref 7.2.2

Companies should calculate the Unadjusted VIF using computerised projection models for all material lines of business. The models should project the cash flows of the Covered Business using the certainty-equivalent approach. The model should project reserves reflecting the reserving methodology and bases used to calculate regulatory reserves at the valuation date, allowing for any future changes in the methodology or bases that are highly likely to occur. The resulting projected regulatory surplus after tax should then be discounted to the valuation date using the discount rate as defined by the certainty-equivalent approach.

In order to calculate VIF, a model is required to accurately project the cash flows expected to arise from the Covered Business. The model should cover all material lines of business, but there are likely to be some lines which it is not economic to model. As a general rule, at least 95% of the business (measured in terms of reserves, premium and value) should be modelled.

Ref 7.2.3

Where grouped data is used companies should be able to demonstrate that the loss of the level of accuracy using the grouped data is not material; otherwise, ungrouped data or data grouped using more appropriate criteria, producing a more accurate result, must be used.

For certain contract types the use of grouped data may reflect the nature of the contract, for instance Group Risk products. In these circumstances the materiality test does not apply.

Ref 7.2.4

The calculation of the Unadjusted VIF should be based on a monthly cash flow model, unless it can be demonstrated that a model projection frequency less than monthly does not result in a material loss of accuracy.

The calculation of the Unadjusted VIF is more accurate and reflects reality more closely when projected on a monthly basis. In reality a significant number of cash flows can occur on a monthly basis, e.g. premiums, commission payments.

Ref 7.2.5

The term of the projection should be sufficient to ensure that all cash flows which materially affect the Unadjusted VIF are fully captured.

Insurance business would be expected to generate profits or losses over the course of its full term and so the projection period should be sufficiently long in order that all material cash flows relating to in-force business have been modelled up to the point that that business expires.

Ref 7.2.6

The Unadjusted VIF should allow for all material beneficial conditions or special terms that are offered on a contract, including guaranteed insurability. Where such beneficial conditions exist, the Unadjusted VIF should be calculated under the assumption that the beneficial conditions continue for as long as is expected by the company, which may be longer than the legal definition contained in the policy contracts.

Many policies contain beneficial conditions compared to the standard product terms. These can be discounts to the premium rates or extra coverage provided free of charge. Often the agreement with the customer specifies that at a certain future date the beneficial conditions will cease or be adjusted, possibly depending on the performance of the group/employer to which the customer belongs.

Assuming beneficial conditions ceased at their contractual termination date when the company's policy in practice is to extend those conditions could lead to an overstatement of the EV.

Ref 7.2.7

Where a policy behaves as two individual elements that interact directly with each other, then the modelling of the Unadjusted VIF should take account of this interaction.

An example of this situation arises with policies where the benefit level is fixed and the company varies the proportion of premium being invested into savings/protection in order to reduce the sum assured. The position should be addressed by either modelling the overall policy as a whole, or making appropriate, consistent, assumptions regarding premium increases or decreases for the separate elements of the policy.

A further example is for policies where the benefit level is not fixed and the policyholder can choose to vary the proportion of premium being invested into savings/protection in order to reduce the sum at risk. In this instance any assumption in relation to changes in the savings element should be consistent with assumptions in relation to the protection element.

A further example is where a child's cover has a discounted premium rate as long as the parent's cover is still in force. For this example, if the parent's cover is expected to lapse before the child's cover, the premium for the child's cover can be assumed to increase in line with the policy conditions and realistic assumptions.

Ref 7.2.8

The Unadjusted VIF should allow appropriately for reinsurance.

The Unadjusted VIF should reflect cash flows and reserve movements after allowance for the impact of reinsurance. For example, where the presence of reinsurance reduces the amount of claim outgo or a profit sharing formula exists then this should be allowed for. Similarly the payment of any reinsurance premiums and commissions should also be allowed for.

Short term reinsurance treaties, such as catastrophe treaties, that are normally renewed, should be allowed for including future renewals based on realistic assumptions. The existence of catastrophe reinsurance will have an implication on how the assumptions for mortality and/or other risk factors allow for catastrophe risks.

7.3 Definition of in force business

Ref 7.3.1

The Unadjusted VIF should be calculated allowing for the policy terms and conditions in force at the valuation date. Contractual or reasonably certain increases or decreases in regular premiums or policyholder benefits should be included in the Unadjusted VIF.

An example of a contractual increase is where premiums automatically increase with salary inflation. The increases in the future premiums should be captured in the model of the Unadjusted VIF. Allowing for the effect of salary increases on premium levels should take account of the expected effect of tax ceilings and the splitting of employee-benefit contributions between different types of policies or other savings vehicles.

An example of a contractual decrease is where premiums on the protection element of a policy are reduced automatically to reflect the reduction in the sum at risk.

Ref 7.3.2

Where increases or decreases in regular premiums are expected with reasonable certainty to arise in excess of a contractual limit, then that increase or decrease should be included in the Unadjusted VIF provided experience substantiates the assumption.

For example, it is acceptable to assume that policyholders are likely to increase the savings element on a policy where they have the option to increase the savings element as the policy duration increases, and there is evidence of regular take up of this option in practice.

Ref 7.3.3

Lump sum premiums used to purchase additional benefits which arise due to increases in regular premiums should be included in the Unadjusted VIF.

For example lump sum premiums used to buy additional severance pay benefits (“pizzuim”) when salary increases are in excess of inflation should be allowed for in the

Unadjusted VIF. This may require separate modelling of the “pizzuim” and “tagmulim” components of a policy where this separation has a material effect on the EV.

Ref 7.3.4

Infrequent and unpredictable single premium payments should be excluded from the Unadjusted VIF. Premiums of this nature received by the company should be classified as New Business rather than renewals of in force Covered Business.

Such business is by nature relatively uncertain and so it would not be appropriate to capitalise future “expected” single premiums and the profits thereon in the embedded value.

Ref 7.3.5

Short term business with a defined term should be included in the Unadjusted VIF on the basis that the policy matures at the end of the term of the original contract.

The issue of renewability is particularly relevant for short term business where there is an expectation that both parties will agree a renewal of the terms and conditions of the contract at the end of the contract period.

However this situation is different to most other forms of new business/renewals. In this case, the option to renew the contract is held by both parties. The company has the right but not the obligation to offer a similar contract at the end of the policy term. If offered, the policyholder has the right but not the obligation to accept the terms of the new contract.

In other forms of contract, the insurer generally has the obligation to offer a renewal of the contract on the same terms and conditions.

This rule applies in particular to Group Risk and health business.

Ref 7.3.6

Changes to covers which can be reasonably anticipated should be allowed for in the Unadjusted VIF.

In other words, such future changes are included in in-force business.

Examples of this are where the policyholder can increase the level of the benefit on an inforce policy.

This may be allowed either explicitly by modelling a conversion rate to revised terms and rider profitability or implicitly via and adjustment to the rider lapse rates.

The modelling approach to rider benefits must be disclosed. Changes in covers which are not reasonably foreseeable and which are not included in the VNB will emerge as an experience variance.

7.4 Approach to valuing global reserves / provisions

Ref 7.4.1

The Unadjusted VIF should include an allowance for the value of the global reserves and provisions identified in Section 5. For each reserve, it should be determined how much is needed as a “best estimate”. The remaining reserve should be assumed to be released over time into the surplus arising.

“Best estimate” should be considered in the context of the discussion on the allowance for non-market risk in Section 11. It should reflect the mean expected outcome to shareholders of fluctuations in experience.

The calculation of the contribution to Unadjusted VIF from global reserves and provisions can be performed outside the main projection model. For example an adjustment to the Unadjusted VIF calculated by the main EV models could be added from a spreadsheet calculation.

The value should make allowance for the time period over which the reserve will be released. This should be consistent with the run-off of the in-force liabilities for which the reserve was set up. The run-off pattern should not allow for reserves which might be required in respect of new business after the valuation date.

8. VALUE OF NEW BUSINESS

8.1 Introduction

The VNB is a key component of EV disclosure. This Section provides a definition of the VNB before adjustment for the NBCoC and NBFOG which are covered in Sections 6 and 9 respectively. For brevity this is referred to as the “Unadjusted VNB”.

This Section sets out the rules and guidance for the calculation of the VNB and is structured as follows:

- Definition of Unadjusted VNB
- Definition of new business
- Calculation of Unadjusted VNB
- Impact of global reserves and provisions on Unadjusted VNB

8.2 Definition of the Unadjusted VNB

Ref 8.2.1

The Unadjusted VNB is the present value, after taxation, of shareholder cash flows arising from the New Business written during the reporting period immediately prior to the valuation date, before allowance for NBCoC and NBFOG.

8.3 Definition of New Business

Ref 8.3.1

New Business is defined to be the Covered Business written during the reporting period ending on the valuation date. The definition of New Business should be consistent with the definition of in force business set out in Section 7.

For example, since group life and health policies should be included up to the end of the current policy term, the renewal of a group life and health policy should be included in the New Business.

Ref 8.3.2

The New Business definition should include business written during the reporting period that has subsequently gone off the books.

This business, although no longer in-force, will have had an impact on the EV due to cash flows occurring during the reporting period. It is important to allow for these in the calculation of VNB.

Ref 8.3.3

The New Business definition should exclude the value of new business expected to be written in future reporting periods.

EV is a measure of the business in-force at the valuation date and does not include the value of business expected to be written in the future.

Ref 8.3.4

The New Business definition should exclude any increases to regular premiums on policies already in-force at the beginning of the reporting period to the extent that such increases have already been included in the calculation of the Unadjusted VIF. Conversely, new and increased premiums on existing business which were not anticipated in the calculation of the Unadjusted VIF should be included in the New Business definition.

Where increments and additional premiums to existing business are captured within the VIF at the start of the reporting period, these should be excluded from the new business added in the reporting period, as to do otherwise would be to double count the value of such premiums in the EV.

Ref 8.3.5

The New Business definition should include any renewals which occur on short term business which has been excluded from the VIF.

New rider benefits on existing policies should be treated as new business.

Where an existing policy gives rise to a new rider benefit, as opposed to a converted rider, then this should be allowed for in the Unadjusted VNB.

Ref 8.3.6

The New Business definition should exclude any business which has not formally gone “on risk” at the valuation date.

This situation could arise, for example, where a policy was sold close to the year end. If the policy has not formally gone “on risk”, there is no liability at the valuation date to the insurance company. However, the calculation of the ANW will need to be consistent in eliminating any premium monies received which have not been placed with such policies.

Ref 8.3.7

A reconciliation should be performed between the volume of New Business being valued within the VNB and the volume of new business being reported externally as sold during the reporting period for other purposes.

It is possible that the definition of new business for EV terms and the definition for general reporting purposes will differ. Typically, this might be because of the treatment of increments or additional single premiums on existing policies, which might be included in new business statistics.

8.4 Calculation of Unadjusted VNB

The remainder of this Section contains rules and guidance on various aspects of the definition of the VNB where, to date, practice differs among companies publishing EV. It is felt that the advantage of consistency within the Israeli industry outweighs the usefulness of flexibility.

Ref 8.4.1

The Unadjusted VNB should be calculated in a consistent manner with that of the Unadjusted VIF, using the certainty-equivalent approach described in Section 7.

The NBCoC and NBFOG are calculated using separate processes which are described in Section 6 and Section 9 respectively.

Ref 8.4.2

The Unadjusted VNB should make full allowance for expenses and commissions incurred in the acquisition of the business.

The Unadjusted VNB should reflect all expenses classified as acquisition expenses in the analysis described in Section 11. The Unadjusted VNB should also reflect the commission terms on which the business has been sold, including any special terms which may apply.

Ref 8.4.3

The Unadjusted VNB should make full allowance for maintenance and investment expenses allocated to the New Business.

Ref 8.4.4

The Unadjusted VNB should not be reduced for development expenses, if these expenses can be allocated to future years' new business according to the company's business plan.

Ref 8.4.5

The Unadjusted VNB should be based on end period economic and non-economic assumptions. It should not be based on pricing assumptions.

In the past, some companies have published VNB on start year assumptions, in particular non-economic assumptions. This is often for practical reasons and based in part on the order in which they calculate the analysis of EV profit. Such companies have often separately published VNB based on end year assumptions in the notes to the EV. This rule is designed to avoid the need for two different VNBs to be calculated and quoted in the disclosure. In the Israeli EV Rules and Guidance there are rules around the order of calculation of the analysis of EV profit to ensure consistency with the above.

For interest rate sensitive products, the end year economic assumptions can differ significantly from the pricing assumptions. The impact of the pricing and investment management decisions during the year should come through in the identification of the ANW impact of writing the new business.

Ref 8.4.6

The Unadjusted VNB should be calculated as at the valuation date, not the point of sale and should separately identify the impact on the VIF and the impact on the ANW.

The act of writing new business generally has a negative impact on ANW. This is a useful item to monitor to help identify the capital strain of writing new business.

This is an area where practice differs in EV reporting to date, and the rule is designed to ensure consistency within the industry.

The total VNB that will be reported includes the full value of the new business from the point of sale. This rule implies that the VIF component of the VNB will be calculated as at the valuation date, and the ANW component of the VNB will be based on actual experience (revenues and expenses) between the point of sale and the valuation date in respect of the new business, rolled forward with interest to the valuation date. It should be noted that as a result of this rule, the VNB will include both investment and non-investment experience variances between the point of sale and the valuation date. Investment variances in particular can significantly impact the VNB between the point of sale and the valuation date. It is optional whether companies wish to separately identify and disclose the investment experience related to the Unadjusted VNB.

Ref 8.4.7

The data to be used in calculating the Unadjusted VNB can be either identified using New Business policy data within the in-force data file, or by identifying the New Business data within the movements file.

These two approaches to calculating the Unadjusted VNB should lead to the same result, provided a consistent allowance is made for the cash flow movements between the point of sale and the valuation date.

It is permissible to calculate the Unadjusted VNB by calculating the Unadjusted VIF component arising from New Business policies , and to separately identify the impact on ANW of selling the New Business. In such circumstances companies would be expected to reconcile the impact on the ANW of selling the New Business from (for example) accounting data and the surplus cash flows arising from the projection model between the point of sale and the valuation date.

Ref 8.4.8

Where grouped New Business data is used companies must demonstrate that the loss of the level of accuracy using the grouped data is not material, otherwise ungrouped or data grouped using more appropriate criteria, producing a more accurate result must be used.

The Unadjusted VNB should allow appropriately for taxation on a marginal basis.

Allowance for taxation is discussed in Section 11. The unadjusted VNB should allow appropriately for the tax expected to arise as a result of writing the New Business.

This allowance for taxation should be on a marginal basis. In other words, if writing New Business changes the value of the Tax DAC valued in the VIF, the impact of that change should be included in the VNB.

8.5 Impact of global reserves and provisions on Unadjusted VNB

Ref 8.5.1

The impact on the global reserves and provisions of writing New Business should be assessed. If the New Business leads to an increase in the level of reserve or a delay in releasing the reserve, the marginal impact should be allowed for in determining the VNB.

9. FINANCIAL OPTIONS & GUARANTEES

9.1 Introduction

Market conditions since 2000 have had an unprecedented impact on the financial position of life insurers worldwide, as a result of the combination of the sale of products with financial options and guarantees, asset-liability mismatching, and sustained falls in equity markets and interest rates. It is important therefore that the EV rules and guidance deal with financial options and guarantees in a rigorous and transparent manner.

There are various elements of the balance sheet which may contain financial options and guarantees, including the tangible assets, the policyholder liabilities, and other aspects of the asset or liability side of the balance sheet including tax assets and liabilities.

This Section is primarily focused on the policyholder liabilities, although certain contract structures in Israel also result in financial options and guarantees being to the benefit of shareholders. In addition the need to consider the impact of financial options and guarantees on value is also a requirement for the tangible assets (see Section 5) and a requirement for the tax assets and liabilities (see Section 11).

The Committee has concluded that the existing products in most Israeli companies do not contain any FOG that have a material impact on the EV, and therefore they do not require the application of this chapter. However, every company should validate if this generalisation applies to its specific portfolio, and this validation should take place at every valuation date since the situation can change as new products are developed and become more material.

The remainder of this Section is structured as follows:

- Definition of financial options and guarantees.
- Financial options/guarantees identification process.
- Classification of financial options/guarantees.
- Setting the EVFOG.
- Setting the NBFOG.

- Impact of non-market risk on EVFOG and NBFOG.

9.2 Definition of financial options and guarantees

Ref 9.2.1

Financial options and guarantees are features of assets and liabilities whose value changes asymmetrically given symmetric movements in financial markets.

Within insurance contracts, such features typically allow the policyholder the more valuable of two (or more) benefits, with at least one being linked to the level of financial markets.

Certain contracts give rise to additional shareholder profit margins when investment returns exceed a pre-defined rate – this is a financial option for the benefit of shareholders.

A “guarantee” is deemed to be included within this definition if the policyholder receives the higher of a guaranteed amount and the benefit had the guarantee not been in place.

Non-profit business, where the guaranteed payout is fixed or only contingent on non-market related events, would not be deemed to have features classified as financial options and guarantees for this purpose. An example not classified as financial options and guarantees would be fixed or inflation-linked annuities payable on survivorship after retirement. However if an inflation-linked annuity had a minimum underpin to the inflation (e.g. the annuity payment will not decrease if inflation is negative), then that feature would be classified as a financial option and guarantee and should be valued accordingly.

9.3 Financial options/guarantees identification process

Ref 9.3.1

Companies should perform an analysis to identify policyholder liabilities in force as at 31 December 2006 which have embedded financial options/guarantees and repeat this for any new product types developed and sold after 31 December 2006.

Materiality should be ignored when determining the list. This is taken into account by identifying the volume of the option/guarantee.

The output of this exercise should be a table including the following fields:

- *Type of product*
- *Description of option/guarantee*
- *Years of sale of product with option/guarantee in stated form*
- *Calendar year in which option may be triggered*
- *Event which can lead to option being triggered*
- *Preferred metric to measure volume of option/guarantee*
- *Volume of option/guarantee in-force*
- *Volume of option/guarantee within New Business*
- *Extent to which the financial option/guarantee is matched by a hedging asset*
- *Description of how management actions and policyholder behaviour impact the cost of the financial option/guarantee*

9.4 Calculating the EVFOG

Ref 9.4.1

The EV balance sheet should contain an allowance for the time value of financial options and guarantees (EVFOG).

The methodology and assumptions proposed in Sections 7 and 10 of this document appropriately captures the intrinsic value of financial options and guarantees based on market-consistent principles. Therefore this Section of the document is only concerned with capturing the time value of options and guarantees.

For options where the market price is known or straightforward to determine at the valuation date, this price should be used as the value for EVFOG.

Generally, the EVFOG is expected to have a negative impact on the EV. However for some financial options and guarantees, the EVFOG impact may be positive, and therefore it is possible for the total EVFOG is expected to have a positive impact on the EV. It is acceptable for positive impacts to be used to offset negative impacts elsewhere. An example of such financial options and guarantees are call options to shareholders, for example the payment to shareholders of an x% share of any credited bonus above a y% level, and where the shareholders do not share in any costs where credited bonus is below y%. The use of market-consistent valuation for the intrinsic value will mean that the time value of this positive value to shareholders will be ignored, and so this should be captured in the EVFOG.

Ref 9.4.2

The provision for financial options and guarantees should be determined using a stochastic market-consistent methodology or, provided that to do so does not result in a material inaccuracy in the EV or VNB, an appropriate closed-form solution.

Where stochastic simulation models are used then these should use standardised market data to calibrate the stochastic economic scenario generator. The scenarios should be market-consistent. The scenarios can either be a set of risk neutral simulations where equal weight is applied in the valuation to the outcome of each scenario, or real-world

simulations with scenario specific deflators. Both approaches should produce the same results, but the output of the models must be demonstrably market consistent.

Where closed form solutions are used then companies should calibrate these to be consistent with the parameters used in the stochastic economic scenario generator.

Companies will be required to disclose the implied volatility and correlation assumptions used where these have a material impact on the EV and VNB.

Companies are encouraged to plan actively for the longer term requirement. Building and testing stochastic models to auditable standards is a time consuming and non-trivial task.

The calibration of the stochastic scenarios should be appropriate to the features of the liabilities. Such features include duration, term and in-/out-of-the-moneyness.

Where hedging exists that offsets the effect of the FOGs, this can be allowed for, which may remove the necessity to model the FOGs explicitly. In such a situation the value/cost of the hedging needs to be allowed for correctly.

9.5 Calculating the NBFOG

Ref 9.5.1

Within the EVFOG, companies should identify what proportion is attributable to the New Business. This should be identified separately and is referred to as the new business financial options and guarantees allowance (NBFOG).

The NBFOG should be calculated by applying the calculation principles used to calculate the EVFOG to the policies used to calculate the Unadjusted VNB.

10. ECONOMIC ASSUMPTIONS

10.1 Introduction

The use of the certainty-equivalent approach means that there is no discretion as to the choice of gross economic projection assumptions or the choice of discount rate. The key economic assumption is therefore the choice of risk-free rate.

The remainder of this Section is structured as follows:

- Definition of risk-free rate.
- Real versus nominal modelling.
- Inflation assumptions.
- Expected Return.
- Asset mix assumptions.

10.2 Definition of risk-free rate

Ref 10.2.1

The risk-free rate assumption within the EV is defined to be the published vector of real interest rates, referred to in current pension fund valuation regulations in Israel.

A company may choose to disclose the equivalent single risk-free rate that, for its own EV produces the same result as the above mentioned vector.

In other countries there has been some debate as to whether a government bond-based risk-free rate or a swap-based risk-free rate is more appropriate. Experience is that for many products this definition does not materially impact the EV result. For some products, in particular large single premium investment products (including annuities) and those with embedded financial options and guarantees, this assumption can be significant.

It is noted that the published vector of interest rates is real, and would need to be appropriately adjusted to nominal, if the EV is calculated using a model that projects nominal cashflows. This is discussed later in this Section.

10.3 Real versus nominal modelling

Ref 10.3.1

It is permissible to use models which project cashflows using either real or nominal interest rates, provided that the model and all assumptions are internally consistent. Both methods should produce the same results for the EV.

Companies building EV models for the first time are encouraged, but not required to project cash flows on a nominal basis to comply with international best practice.

Companies should disclose how inflation is treated in its models.

10.4 Inflation assumptions

For the purposes of the EV, various inflation-related assumptions may be required, including expense inflation, inflation-linked increases in premium and benefits, claim inflation in particular medical claim inflation.

Ref 10.4.1

The CPI-inflation assumption should be set equal to that implied by the difference between the yield on fixed-rate government bonds and the yield on CPI-linked bonds of similar duration. Other inflation assumptions should be set to be consistent with the CPI-inflation assumption. The rationale for any differences should be disclosed.

It is noted that for health business, the setting of the medical claim inflation assumption requires significant judgement. This issue is dealt with by allowing company discretion in the setting of the assumption, and requiring the impact of experience variances to be disclosed and requiring a sensitivity to be performed on this assumption.

Companies should disclose how the inflation assumption is set.

10.5 Expected Return

Ref 10.5.1

Companies are required to determine an expected return on assets allocated to Covered Business and assets included in the ANW calculation. The expected return should be based on the company's expectation of the return on assets over the next financial reporting period. For assets held at book value this will be the book value return.

The expected return is not required for the EV, but is required in the presentation of the analysis of movement.

10.6 Asset mix assumptions

Ref 10.6.1

The EV model will require assumptions around the current and expected future asset mix of the assets backing the Covered Business.

The current asset mix should be set equal to the actual mix of assets at the valuation date.

The expected future asset mix should be consistent with the current asset mix. Any material differences between the expected future asset mix and the current asset mix should be disclosed and the rationale explained.

11. NON-ECONOMIC ASSUMPTIONS AND RISK

11.1 Introduction

It is a requirement that the EV is calculated by all Israeli companies. This includes a mixture of large companies, where experience data is credible and experience analyses are completed on a regular basis, and small companies where experience data is not credible and experience analyses are not yet regularly completed. The Israeli EV Rules and Guidance have been drafted to take account of this fact. Reference is therefore made to “company-specific assumptions” representing those assumptions which are based on an analysis of credible data undertaken by the company.

The rest of this Section is structured as follows:

- Principles when setting non-economic assumptions and allowing for risk.
- Demographic assumptions setting – company-specific or industry-wide.
- Experience investigations.
- Setting demographic assumptions.
- Setting expense and commission assumptions.
- Bonus rates.
- Allowance for taxation.

11.2 Principles when setting non-economic assumptions and allowing for risk

The EV framework as proposed allows for market and credit risk but leaves open the question as to whether sufficient allowance has been made for other risks.

Financial theory states that investors should not require compensation in the discount rate for non-market risks as long as they can diversify away the uncertainty around the return. In such circumstances the allowance for non-market risk is made through the choice of appropriate best estimate assumptions, with indirect allowance through the cost of capital. This theory assumes that best estimates have been defined appropriately.

Ref 11.2.1

Best estimate assumptions should:

- be set so as to give the mean financial outcome to shareholders, .
- have regard to past, current and expected future experience and to any other relevant data.
- be age, calendar year or policy year dependent if material.

Ref 11.2.2

Companies should consider the appropriateness of the company-specific best estimate assumptions for each EV calculation, and update them if necessary.

Ref 11.2.3

Companies are required to perform a risk gap analysis of the proposed EV basis including proposed EV provisions in the light of the above rules and ensure that sufficient allowance has been made for all risks.

This analysis should take account of the following:

- *Whether best estimate non-market risk assumptions adequately allow for skewness in the risk distribution (for example the potential skewness related to catastrophes and war-risk).*
- *Whether best estimate non-market risk assumptions adequately allow for asymmetries in the payout to shareholders arising from fluctuations in the distribution.*
- *Whether there is an assumed correlation between particular non-market risks and market movements.*
- *Whether there are some risks with low probability of occurring which have not been captured within the best estimate assumptions set and would lead to losses to shareholders should they materialise. A typical example is operational risk.*

As part of the risk gap analysis companies should consider whether the presence of options and guarantees (which may be financial or insurance-related) within particular products may give rise to an asymmetric fluctuation in the claim payout as a result of fluctuations in the non-market risk.

11.3 Demographic assumption setting

Ref 11.3.1

Where credible and relevant data exists, companies should undertake experience analyses in order to set company-specific assumptions.

Ref 11.3.2

Where credible and relevant company-specific data does not exist then the most suitable alternative sources of data should be identified. In this case, industry statistics derived from experience of similar or identical policies in the Israeli market can be used in the first instance, provided that there are no other more suitable external statistics.

For example, where a company is making assumptions with regard to annuitant mortality, but does not have any credible experience, then the assumptions could be based on the Israeli standard tables for annuitants arising from occupational pension schemes, adjusted for any expected differences or built-in margins. In addition, statistics based on reinsurer's rates would normally be an acceptable source of industry data.

Ref 11.3.3

Where no credible data exists and no appropriate external statistics exist, then companies may use the discretion of the actuary for setting the best estimate assumptions provided this should be disclosed.

A starting point may be information that is used to help set pricing bases. Where assumptions which have been set solely using the discretion of the actuary without recourse to external or internal data have a material impact on the EV, then this should be disclosed.

Ref 11.3.4

Where companies do not use assumptions based on their own experience, then this should be disclosed.

11.4 Experience investigations

The following rules apply to those companies using company-specific assumptions.

Ref 11.4.1

Companies should perform experience investigations to determine company-specific best estimate assumptions. Experience analyses should be undertaken annually for the assumptions which most materially impact EV. For less material assumptions a less frequent analysis is permitted, although no less frequent than once every three years.

Material assumptions are likely to include, but are not limited to, the following examples:

- *Expenses*
- *Mortality*
- *Morbidity*
- *Persistency*
- *Premium linkage to salary*

Where an assumption is material to one line of business, but not another, then it is permissible for the company to restrict the more frequent analyses to the product lines where the assumption has a material impact.

For less material assumptions actual experience should be monitored against best estimate assumptions, and the impact on EV of variations should be identified in the analysis of EV profit, as specified in Section 14. Where there is a material impact on EV arising from fluctuations in experience, an experience analysis is required in the current reporting period, as a large variance in the analysis of movement would indicate that the assumption would need to be updated immediately.

The period over which data is collected for the analysis, and the end date of the data captured (i.e. the end of the period over which data is captured) for the analysis will depend on the item being analysed and the company's own experience. However, in general it would be expected that the end date of the data captured would be no more than one year prior to the valuation date. In determining the period of data capture, companies should consider the impact of items which may affect policyholder behaviour and therefore affect the validity of using data arising from certain periods. Such items include, but are not limited to:

- *Significant changes in economic conditions*
- *Changes in legislation*
- *Changes in claims management procedures*

Where the experience has been subject to a one-off "shock" which is not expected to recur then the impact of this event should be excluded from the analysis. An example would be where a change in legislation causes a short term change in policyholder behaviour which is not expected to continue in the future.

The construction of data points within the experience investigations should reflect the material features of the business for that assumption.

Such features are likely to include, but are not limited to, the following examples:

- *Product*
- *Age*
- *Sex*
- *Smoker status*
- *Policy year*
- *Calendar year*
- *Distribution channel*

Certain features may be immaterial for certain product/assumption combinations in which case it is acceptable to ignore that feature in the experience analysis.

Where two very similar products are in existence and they exhibit similar experience, then it is acceptable to group the data across the similar products.

11.5 Setting demographic assumptions

Where an analysis of past experience has been undertaken then this should form the basis for setting demographic assumptions.

Where a step change in experience is clearly visible in the analysis and this is expected to be a permanent feature then when determining demographic assumptions more weight should be placed on the most recent data.

Companies should justify the approach where more weight is given to more recent data, particularly if this acts to increase the embedded value. An example may be where an improvement in customer services leads to a decrease in lapse rates.

Where a trend in experience is clearly visible in the analysis and this is expected to continue in the future then this should be reflected in setting the assumptions. An example is that mortality continues to improve for annuitants.

Where there is a high correlation between different assumptions then this should be reflected in the assumption setting process. For instance if a company assumes beneficial conditions are withdrawn on a product this may lead to higher lapse rates and such an allowance should be allowed for. Similarly if a premium rate review is likely to lead to premium increases not observed elsewhere in the market then the potential effect on lapse rates should be considered when setting the lapse assumptions for that product.

Provided that policy conditions permit premium rate reviews, then it is permissible to allow for premium increases at policy review dates within the EV based on realistic expectations regarding the timing and conditions applicable to the premium rate review.

If a company assumes that there is greater than nil profit after the review date then this should be disclosed. The increased outgo due to anti-selection risk and future cost of

processing changes in future premium levels should be allowed for. If other companies with similar products are not following this approach, the decrement assumptions (in particular lapses) should be reviewed in the light of possible worsening future experience following the review.

All material beneficial conditions should be allowed for within the EV. It is permitted to assume that beneficial conditions cease provided this follows the terms and conditions of the policy, and provided this is consistent with business plans. If beneficial conditions were assumed to cease, this could lead to an increase in lapses and companies should review their other demographic assumptions as appropriate..

The expected risks and costs around the guaranteed insurability option should be allowed for within the EV and VNB.

Where a guaranteed insurability option is available and experience indicates that this option is exercised by the policyholder then companies should make an assumption regarding the cost of policyholders exercising that option at the exercise date.

11.6 Setting expense and commission assumptions

Ref 11.6.1

The VIF should reflect the full costs of the ongoing life insurance operation including overhead expenses. The VNB should reflect the full acquisition costs associated with securing that business and the ongoing expenses associated with administering that book including its share of overhead expenses. Where expenses are incurred outside of the life insurance company which relate to the Covered Business then these should be included in the expense assumptions.

All expected future acquisition, maintenance, claim and investment expenses in respect of the in-force business should be captured within the best estimate assumptions, and all expenses incurred in writing new business should be included within the value of new business. A marginal expense allocation when determining the VNB is not acceptable.

Companies should include the costs of service companies on a “look through” basis where these service companies service the life company.

Where a holding company incurs certain expenses which relate to the insurance operation then these should be included in the expense assumptions.

In certain circumstances the group holding or service company and the insurance company may operate on commercial terms. In such circumstances it may be assumed within the EV that the expenses equal the charges by the holding / service company, provided that it can be demonstrated that this approach does not disguise material profits or losses by the holding / service company and that the approach is disclosed.

Ref 11.6.2

Companies must undertake an analysis to allocate expenses to one of acquisition, maintenance, claim, investment or development. If more than 10% of the current expenses are allocated to development expenses then the magnitude of this allocation in excess of 10% and the impact on the EV must be disclosed.

The level of detail of analysis the company undertakes will depend upon the size and complexity of the company and its business. Overheads should be allocated to the

Covered Business as appropriate consistent with current business plans and future expectations.

Development expenses are defined as those which are expected to lead to profitable future new business or those which are expected to lead to improvement in future expenses beyond those allowed for within the EV or expenses arising as a result of one-off projects driven by legislation.

Examples of development expenses are those which relate to developing a future new business strategy or systems developments to support the launch of new products.

Development expenses in the reporting period should not be allocated to the VNB.

The expense amounts should be converted into product loadings appropriate for the business. In the event that product loadings cannot be derived then companies should demonstrate that the EV and VNB reflects the level of expenses set out in the Israeli EV Rules and Guidance in aggregate.

Ideally, maintenance expenses should be linked to the in-force business by expressing them as a percentage of premium or a per policy amount, depending on their nature. It may be appropriate to express acquisition expenses as a percentage of the sum insured or a per policy amount.

For smaller companies, the ability to differentiate between costs associated across products may be limited. In this instance an approach which models expenses globally is acceptable.

Expense overruns should be allowed for and disclosed in the EV. If the level and duration of overrun relies on an assumption regarding the rate of future new business, the new business assumptions used should be disclosed.

Companies should be prepared to provide a sensitivity of the results on the assumption that the overrun is never eliminated.

Expected future expense savings should not be allowed for within the EV beyond what has been achieved by the valuation date.

Expected future worsening of expense levels should be allowed for within the EV.

Where future changes in commission payments are known then these changes should be allowed for in the EV and VNB provided that:

- *There is a business plan in place to change the commission rates which has been approved by the Board of Directors*
- *The impact of the change in commission rates is disclosed.*

11.7 Bonus rates

Ref 11.7.1

The method used to value discretionary-participating business must make assumptions about future bonus rates and the determination of profit allocation between policyholders and shareholders. Projected bonus rates should be consistent with policy conditions, company practice, regulatory requirements and the assumed future investment returns used.

Currently in Israel there is no discretionary-participating business.

11.8 Allowance for taxation

Ref 11.8.1

The allowance for taxation within the cash flow models should be based on existing legislation. This should include future changes to the tax regime where these have been legislated for.

Where tax rates within existing legislation differ by asset class, this difference should be allowed for in the model.

Ref 11.8.2

If tax rates are expected to change in the future, companies should disclose whether or not these expectations are allowed for within the EV and VNB.

Where changes have been announced by the regulators, companies should allow for these explicitly within the EV calculation and disclose the impact.

Where changes are uncertain, companies should calculate the EV without allowance for the impact of the change, but perform a separate sensitivity to assess the potential impact of the change.

Ref 11.8.3

If material tax assets exist within the EV and/or VNB, the value of tax assets should be set with regard to the delay in realisation of such assets, the time value of money and the impact of market fluctuations on this position.

The taxation liability of a company arising from certain policies in-force is reduced as a result of the write-down of the Tax DAC over a period of time. This reduction in the tax liability (and hence increase in the VIF) should be allowed for.

The allowance can be made at a global level as opposed to a model point level.

12. MANAGEMENT ACTIONS AND DYNAMIC POLICYHOLDER BEHAVIOUR

12.1 Introduction

For business where the company has discretion in respect of the management of the business and claim payouts, the assumptions around management actions can materially impact the EV and VNB. Currently no business in Israel fits this description (in other words, “management action” in this section does not refer to the regular management activity that takes place in a company, rather to the irregular actions that can take place in response to irregular changes in policyholder behaviour or economic circumstances, where management has discretion in areas which are normally contractual). However this section has been retained in order to meet any potential future product developments.

The rest of this section is structured as follows:

- Calculation of EVFOG and NBFOG.
- Management actions.
- Consistency between EV and VNB.
- Financial impact.

12.2 Calculation of EVFOG and VNBFOG

Ref 12.2.1

The calculation of EVFOG and NBFOG can incorporate the impact of management actions provided the rules below are followed.

12.3 Management actions

Ref 12.3.1

Any allowance for management actions should be fully disclosed and agreed by the board of the company.

When considering the impact of economic sensitivities on building stochastic simulation models, assumed management actions may be a key determinant. Examples of possible management actions include:

- *Setting of future bonus rates, including reducing future bonus rates or smoothing*
- *Changing the split of bonus rates across policies, e.g. to enable better matching of assets and liabilities*
- *Changing the asset allocation weight in equities or moving to a dynamic asset allocation*
- *Purchasing hedging options (may be difficult to model)*
- *Closing to new business (but see below)*

12.4 Dynamic policyholder behaviour

Ref 12.4.1

The calculation of EVFOG and NBFOG should consider the impact of dynamic policyholder behaviour where this can be projected with reasonable confidence.

12.5 Consistency between EV and VNB

Ref 12.5.1

There should be consistency between the management action and policyholder behaviour assumptions backing the VIF and VNB calculations.

12.6 Financial impact

Ref 12.6.1

The financial impact of the management actions assumptions should be identified by carrying out a sensitivity test on the VIF and VNB results to show the impact of assuming no management actions.

13. POLICY DATA

13.1 Introduction

The policy data used within the EV projection should be accurate in order to give confidence in the results of the projection. Errors in areas such as sums assured or premiums payable could have a material impact on the resulting EV.

This section provides rules and guidance on the data to be used as an input to the EV projections. Companies must follow the rules in order to ensure that:

- the VIF and VNB takes account of all policy data in respect of Covered Business;
- the policy data is sufficient detailed to ensure the VIF projection accurately reflects the features of the Covered Business; and
- the policy data has been grouped in an appropriate way (if appropriate).

Obligations exist elsewhere for companies to ensure the integrity of policy administration data and this is not considered here.

13.2 Data Validation

Ref 13.2.1

Companies must perform independent checks of the data to be used in the VIF to ensure it is appropriate for the EV calculations. These checks should be sufficient for the company to be able to demonstrate that:

- **any corruption or loss of data between the extract being made from the administration systems and that being used in the EV calculations has been identified and explained;**
- **the data reflects appropriately the policy structures and terms which are relevant for the EV calculation.**

Ref 13.2.2

Companies should perform a reconciliation of the data as used in the EV calculations with the unadjusted data extracted from the administration systems.

External disclosure of the above checks is not required.

Companies are expected to undertake these checks on a policy by policy basis using database programs.

Companies should perform reasonableness checks to ensure the data to be used in the EV calculation appropriately reflects the product terms and structures.

Companies should perform a reconciliation of the movement in the data used in the previous EV calculation and the current EV calculation.

The reconciliation should be performed for the key in-force items used in the EV calculation, for example:

- Total number of policies*
- Total sum assured*
- Total annual premium in-force*

Companies should carry out checks which compare the data extracts used in previous EV calculations with those used for the current EV calculation. For year-end 2006 this comparison may not be possible. The checks should be performed to ensure that the movement in data within individual policies can be reasonably explained.

Checks that group data movements into ranges and identify the reasons for outliers are permissible. For example a check may be carried out on the movement in the sum assured on individual contracts over the period. Where that change in the sum assured lies outside a tolerable range then individual spot checking of the data may be required.

Checks to ensure consistency with other areas of reporting, e.g. accounting, should also be carried out.

Ref 13.2.3

Where a material data error or omission exists, companies should disclose the nature of the error or omission. This can be done in aggregate for all errors and omissions.

Ref 13.2.4

Data used in the Embedded Value reporting process should be reconciled to that used in other reporting areas to ensure consistency, e.g. published accounts.

13.3 Data Coverage

The data extracted for the EV reporting process should represent the business described under the term “Covered Business” and should reflect all in-force business as at the valuation date.

New business written during the reporting period should be clearly identifiable from business in-force at the start of the reporting period.

This is required to comply with the requirements of the Sections 8 and 15.

Details relating to the treatment of unmodelled business are provided in Section 14.

13.4 Data Materiality

The data extracted from the administration system should contain sufficient detail to enable the key features that drive EV results to be captured fully by the EV model.

It is important that all data fields that impact the EV result are captured within the EV data extract. The following points give an indication of some key areas where information might be recorded. Note that this list is not comprehensive and that not all the fields below are relevant to all products:

- *Date of issue*
- *Policyholder’s date of birth*
- *Annual premium*
- *Product Identifier*
- *Sum assured/level of accrued bonus/unit fund (“tzvira”)*
- *Surrender value*

- *Term*
- *Smoker Status / gender / underwriting group*
- *Premium paying status*

13.5 Data Grouping

The grouping of data can result in a significant loss of accuracy. The projection systems used for the calculation of EV may be able to cope with a seriatim run of the policy data in the context of a deterministic EV projection. If so then data grouping should be avoided.

For businesses with large policy data files, and as stochastic models come into use it may be necessary to group policy data in order to keep projection runtimes to a manageable level.

Where data is grouped, the company should satisfy itself that the loss of accuracy compared with using ungrouped data falls within the prescribed materiality limits

Checks to assist with assessing the materiality of the loss of accuracy from data grouping include, but are not limited to:

- *Grouped data should be checked for consistency with ungrouped data held on the administration system.*
- *The results obtained from the model using a grouped data file should be compared to results from using an ungrouped data file at least annually.*
- *Any grouping criteria should be reassessed on an annual basis*
- *Any grouping criteria should be reassessed if it is to be used for other modelling purposes e.g. stochastic modelling.*

14. MATERIALITY LIMITS

14.1 Introduction

This Section sets out how companies should determine materiality limits for EV calculations.

14.2 Materiality limits

Ref 14.2.1

Companies should determine appropriate materiality limits for each of EV, VIF, VNB and the analysis of movement. Such limits should be expressed in both percentage and monetary terms.

Ref 14.2.2

Materiality limits should be disclosed

Materiality limits should be interpreted to mean the inaccuracy in value created by modelling and data approximations which would arise in the values if the assumptions underlying the calculation of the VIF and VNB were borne out exactly.

For the balance sheet EV, recommended maximum materiality limits are as follows:

- *For the calculation of the VIF: The maximum of 5% of the VIF, and an absolute amount to be determined by the Israeli industry and regulator, consistently to other similar materiality criteria in Israel.*
- *For the calculation of the VNB: The maximum of 10% of the VNB, and an absolute amount to be determined by the Israeli industry and regulator, consistently to other similar materiality criteria in Israel.*

For the analysis of movement, recommended maximum materiality limits are as follows:

- *For the calculation of Embedded Value Profits: The maximum of 2% of the opening VIF, , and an absolute amount to be determined by the Israeli industry and regulator, consistently to other similar materiality criteria in Israel.*

Where an inaccuracy that is immaterial according to the above criteria would lead to a qualitative difference in the reported EV results (for example, reporting an EV loss instead of an EV profit), the company should consider tightening the materiality criteria in order to avoid such a “qualitative error”.

The rationale for the differing materiality limits for VNB and Embedded Value Profits compare to the VIF is as follows:

The data required to calculate the VNB is normally less robust than that used to calculate the VIF, hence the higher materiality limit for VNB.

Systematic errors in the embedded value will cancel each other out from one year to the next, hence the lower materiality limit for Embedded Value Profits.

15. ANALYSIS OF EV PROFIT

15.1 Introduction

The analysis of EV profit is also known as the Analysis of Movement. The former term is used in this document.

The analysis of EV profit process is a key step within the actuarial control cycle. A breakdown of the movement in EV between successive reporting periods provides management (and analysts) with information on how the company has performed over the year relative to expectations in various categories. This helps in assessing how management has affected shareholder value. In addition it helps to:

- identify the need to improve internal processes, for example with regard to expense management;
- highlight any EV assumptions which may need to be revised for future reporting periods;
- identify where premium rates and other features of new business to be written in the future should be reviewed; and
- provide a check that there are no material errors in the EV models and processes.

This section provides rules and guidance for the production and presentation of the analysis of EV profit and is structured as follows

- Requirement to produce analysis of EV Profit.
- Procedure for Calculating EV Profit.
- Presentation of analysis of EV Profit.

15.2 Requirement to produce analysis of EV profit

Ref 15.2.1

Companies are required to disclose details of the analysis of EV profit over the reporting period.

15.3 Procedure for calculating EV Profit

Ref 15.3.1**Companies should follow the order of calculation set out in Table 15.1**

Note that the order to calculation set out below follows from the order of presentation in section 15.4, which applies to most regular situations. However, where there was an extraordinary and material event or transaction which affects the movement in EV, it should be disclosed and presented in the movement in the EV in an appropriate manner, which may diverge from the presentation in section 15.4, such as by adding an extra line and item. This may affect the order of calculation in the table below.

TABLE 15.1

Process for analysis of EV profit

Run	Valn. date	Data	Allow for Financial Year experience variances?	Insurance assumptions	Economic Basis (and scenarios)	Investment return in Financial Year	Comments	Output
0	FYE - 1	FYE - 1	No	FYE - 1	FYE - 1	FYE - 1 basis	Published number for last year-end	Opening EV
1	FYE - 1	FYE - 1	No	FYE - 1	FYE - 1	FYE - 1 basis	As for run 0, but with any opening adjustments (* see below for examples)	Opening adjustments (= run 1 – run 0)
2	FYE - 1	FYE - 1	No	<u>FYE</u>	FYE - 1	FYE - 1 basis	As for run 1, but with FYE - 1 non-economic assumption changes split separately order to assess the impact of each change	Insurance Assumptions changes (=run 2 – run 1)
3	<u>FYE</u>	FYE - 1	No	FYE	FYE - 1	<u>Expected (best estimate) for Financial Year only</u>	Roll-forward a year on the expected 2006 best-estimate return and recalculate the EV at this date on the FYE - 1 economic basis/scenarios	Expected Return (=run 3 – run 2)
4	FYE	FYE - 1	No	FYE	<u>FYE</u>	<u>Actual</u>	As for run 3, but allowing for actual investment returns and FYE economic conditions (may be split down further to aid understanding of impact)	Investment Variance (=run 4 – run 3)
5	FYE	FYE - 1	<u>Yes</u>	FYE	FYE	Actual	As for run 4, but allowing for known insurance experience variances (e.g. higher than expected expenses/lapses/deaths etc.). Split into more runs to quantify each experience variance separately	Insurance Experience variance (=run 5 – run 4)
6	FYE	<u>FYE</u> (excl)	n/a	FYE	FYE	n/a	Actual 2006 EV excluding 2006 new business	Unexplained movement (=run 6 – run 5)

TABLE 15.1**Process for analysis of EV profit**

Run	Valn. date	Data	Allow for Financial Year experience variances?	Insurance assumptions	Economic Basis (and scenarios)	Investment return in Financial Year	Comments	Output
		<u>New Business written in Financial Year)</u>						
7	FYE	<u>FYE</u>	n/a	FYE	FYE	n/a	Actual 2006 EV	Value of New business (=run 7 – run 6) and Closing EV

The definitions in the table mean:

FYE = Current Financial Year End (Valuation Date)

FYE – 1 = Previous Financial Year End

* Opening adjustments referred to in the above table could include, for example, corrections or changes to the model, new EV methodology or sale of a portfolio. Any of these examples, if they are material, could warrant a separate and special disclosure and presentation beyond that contained in the above table and standard presentation.

It is noted that the order of calculation within the analysis process does not fully follow the presentation order set out below. The main difference is that run 2 in the table above is carried out before the analysis of actual against expected experience. Therefore variances arising from actual experience are measured against end of year, as opposed to start of year assumptions. Many companies adopt this approach because it enables run 2 to be performed before the year end and therefore accelerate the reporting process. The alternative is to move run 2 to be immediately before run 6 which may have implications for the timescales over which the EV is produced.

15.4 Presentation of analysis of EV profit

Ref 15.4.1

The analysis EV Profit should be presented in nominal terms in a manner consistent with Table 15.2.

TABLE 15.2**Analysis of EV profit**

Item	Adjusted net worth¹	Value of in force²	Total EV
Opening EV	XXX	XXX	XXX
Opening adjustments	XXX	XXX	XXX
Restated opening EV	XXX	XXX	XXX
Profit from existing business, consisting of:	XXX	XXX	XXX
- operating assumption changes	XXX	XXX	XXX
- expected return on VIF	XXX	XXX	XXX
- expected return on ANW	XXX	XXX	XXX
- expected surplus arising	XXX	XXX	XXX
- operating experience variances	XXX	XXX	XXX
Contribution to profit from new business	XXX	XXX	XXX
Development costs	XXX	XXX	XXX
EV operating profit	XXX	XXX	XXX
Non-recurring items	XXX	XXX	XXX
Investment variances on in force	XXX	XXX	XXX
Capital inflows/outflows	XXX	XXX	XXX
Unexplained	XXX	XXX	XXX
EV profit	XXX	XXX	XXX
Closing EV	XXX	XXX	XXX

1. More information can be provided by splitting this into Required Capital and Free Surplus. This is useful at least internally.

2. More information can be provided by splitting this into VIF before EVFOG and EVCoC, EVFOG and EVCoC.

Whilst a split of the analysis column VIF into VIF before EVFOG and EVCoC, EVFOG and EVCoC is not required externally, this split is required internally as it helps provide a check on the results.

The order and format of the above presentation applies to most regular situations.

However, where there was an extraordinary and material change, event or transaction

which affects the movement in EV, it should be disclosed and presented in the movement in the EV in an appropriate manner, which may diverge from the above presentation, such as by adding an extra line and item, or by presenting the EV and related information before and after the relevant event or transaction.

A company should exercise discretion in presenting the change in EV, and in the related disclosures, if such discretion or flexibility improves the level of understanding of the change in EV in respect of extraordinary events, changes in methodology or transactions. Possible examples include capital raising, changes in accounting policy or estimates (not related to VIF) that affect the ANW and the acquisition or sale of a portfolio or subsidiary.

If such items have a non-material impact on the EV then they may be disclosed, in aggregate, under “non-recurring items” in the above table.

The impact on the EV of a change in the reserving method or bases that is not accompanied by a related change in the EV assumptions (used for calculating the VIF) should be presented under “non-recurring items” in the above table.

The impact on the EV of a change in the reserving bases that is accompanied by a related change in the EV assumptions (used for calculating the VIF) should be presented under “assumption changes” in the above table. (In other words, the change in the EV assumptions would primarily be reflected under the VIF column of the above table, and the impact from the change in the reserves from changing the same assumptions would primarily be reflected under the ANW column, in the same row).

16. SENSITIVITIES AND SCENARIO ANALYSES

16.1 Introduction

The sensitivity tests performed on the EV result provide management with useful information about the key risks to which the embedded value and VNB is exposed. This information can be used to improve the measuring and monitoring of risk.

This section gives guidance around specific sensitivities that should be carried out on the EV result in order to provide suitable information to management to help improve and maintain internal risk control processes.

16.2 General guidance

Ref 16.2.1

Sensitivity tests on all material experience assumptions should be carried out at least annually.

It is only necessary to calculate a sensitivity test in a single direction, unless a movement in the opposite direction should be expected to give a significantly different movement in which case both directions should be shown. This situation could arise for example where the value of options and guarantees held by the company are close to at-the-money pre-sensitivity. Post-sensitivity, the assets may have reduced considerably, but the corresponding fall in liabilities would be capped once the options went in-the-money.

Generally, it is helpful to split the EV impact into adjusted net worth and VIF but this is not a requirement.

When performing sensitivity tests, companies should keep reserving bases constant and only vary future experience assumptions, unless it is misleading to do so. The choice of methodology should be clearly disclosed in either case.

The preparation of segmental level sensitivities, the preparation of sensitivities at segmental level is not required.

Ref 16.2.2

Each sensitivity test is required to be calculated in isolation, i.e. varying one assumption at a time.

Ref 16.2.3

The sensitivities should incorporate the impact on EVFOG/NBFOG and this impact should be disclosed separately.

Required capital does not need to be recalculated.

Ref 16.2.4

The sensitivities should be provided for total EV results and VNB.

Splitting sensitivities into these two parts gives useful additional information. For example, it allows analysts to make an assessment of whether the risks and new business written during the reporting period differs materially in any way from the EV as a whole.

Ref 16.2.5

Where relevant to the company, each sensitivity is required to be submitted alongside the EV submission.

There may be some circumstances where the products or asset mix of a particular company result in the sensitivity having no effect on the EV and VNB, In these circumstances it is permissible for companies to disclose that this sensitivity is not relevant and no calculation in respect of that sensitivity has been performed.

16.3 Required Sensitivities

Ref 16.3.1

Sensitivity 1: Parallel reduction of 50 basis points in the real risk-free rate, with a corresponding increase in index-linked asset values.

Ref 16.3.2

Sensitivity 2: Parallel reduction of 100 basis points in the nominal risk-free rate, with a corresponding increase in fixed interest asset values.

Starting assets and unit fund values should be re-calculated to reflect the change in the values of index-linked or fixed interest assets arising from the change in the level of the yield curve.

Corporate bond credit spreads should be assumed unchanged.

Equity and property values should be assumed to be unchanged.

Nominal risk-free interest rates should not be allowed to fall below 0% at any durations.

Where an immediate reduction in the risk free rate would result in the revaluation of certain reserves then this should be allowed for in the sensitivity.

Future inflation should assume to be unchanged such that there is a parallel shift in both the real and nominal yield curves.

Where the reserving basis does not change with market conditions (e.g. where the reserving basis is based on the pricing tariff) then no revaluation of reserves in relation to those policies is required.

Ref 16.3.3**Sensitivity 3: 10% reduction in market values of equity/property**

Starting assets and unit fund values should be re-valued to reflect the change in the values of equity and property assets arising from the assumed reduction in asset values. The revaluation should include any derivative assets which are a function of underlying equity or property assets.

Separate disclosure of equity and property movements is not mandatory. However, an insurer may choose to disclose separately if the results were significantly different for these asset classes.

Where an immediate reduction in the market value of equity and property assets would result in the revaluation of certain reserves then this should be allowed for in the sensitivity.

Companies should assume that the portfolio is re-balanced the market movement to achieve the same long-term asset mix as persisted at the balance sheet date

Ref 16.3.4**Sensitivity 4: The impact of assuming the implied volatility increases by 20%.**

This sensitivity should only be applied to the recalculation of EVFOG and NBFOG and for any assets specifically backing those financial options or guarantees.

The sensitivity should be carried out in a proportionate manner i.e. if the actual implied volatility of the market is 15%, the sensitivity is of a 3% rise in implied volatility to 18%.

Ref 16.3.5**Sensitivity 5: 10% increase in maintenance expenses**

An immediate increase of all expenses which have been classified as maintenance in the calculation of the EV and VNB should be assumed.

An increase in maintenance expenses may result in an increase in reserves. However for the purposes of this sensitivity, no such change to reserves should be assumed.

Policy fees or explicit charges to meet maintenance expenses contained in policies should be unchanged from that assumed in the EV and VNB.

Ref 16.3.6**Sensitivity 6: 10% proportionate increase in lapse rates**

The sensitivity should be applied multiplicatively, i.e. a base lapse rate of 5% pa becomes $1.1 \times 5\% = 5.5\%$ pa.

Paid-up rates should remain unchanged from that assumed in the EV and VNB.

Ref 16.3.7

Sensitivity 7: 10% proportionate increase in base mortality and morbidity rates for protection and investment covers, and 10% proportionate decrease in base mortality for annuity covers.

Companies must carry out sensitivities separately (with mortality changing in opposite directions) for assurance business and annuity business (both for EV and VNB), however the results may be disclosed together as one item if the absolute impact of one of the sensitivities is less than 5% of the impact of the other, otherwise separate disclosures are required .

Where the sensitivities are disclosed together, companies must disclose which sensitivity dominates.

The basis of classification of business into Life and Annuity should be disclosed alongside this sensitivity.

Where the change in the level of base mortality and morbidity would result in a revaluation of reserves then this should be allowed for in the sensitivity.

Where, in the normal course of events, companies would reflect a change in the base level of mortality in future pricing reviews then companies should allow for this in the sensitivity and disclose the future management actions modelled as a reaction to the changing mortality/morbidity rates.

16.4 Scenario analyses

Ref 16.4.1

Where a company anticipates that an event (which is outside its control) which has occurred prior to the Valuation Date, will have a material impact on the embedded value, but the impact is as yet unknown then the company is permitted to perform a scenario analysis and calculate a Scenario EV and Scenario VNB.

Ref 16.4.2

If the company performs a scenario analysis, then the Scenario EV and Scenario VNB replaces the EV and VNB.

Ref 16.4.3

Companies are required to disclose fully the assumptions used in the scenario analysis, how these deviate from best estimate assumptions derived from past experience, and what the impact has been in moving from the EV and VNB to the Scenario EV and Scenario VNB respectively.

In certain circumstances there may be significant uncertainty as to the accuracy of best estimate assumptions due to, for example, legislative changes which have been announced, but where the impact has not yet fed through to life office experience.

For the avoidance of doubt all other sensitivities in this section must be calculated with reference to the Scenario EV and Scenario VNB.

This section does not apply for events which happen after the valuation date.

Ref 16.4.4

Alternatively the company may chose to perform a sensitivity in which case the company is required to disclose fully the assumptions used in the sensitivity, how these deviate from best estimate assumptions derived from past experience, and what the impact has been on the EV and VNB

16.5 Sensitivities to reflect post Valuation Date events**Ref 16.5.1**

If an event has occurred after the Valuation Date which the company expects to have a material effect on the EV and VNB then a sensitivity of the EV and VNB to that event is required.

Ref 16.5.2

For the purposes of this section, material means a 20% change in the Embedded Value.

Ref 16.5.3

Companies are required to disclose fully the assumptions used in the sensitivity, how these deviate from best estimate assumptions derived from past experience, and what the impact has been on the EV and VNB.

The EV will change over time due to the emergence of profits on the in-force and the addition of value by writing new business. This change should be taken into account when considering the materiality limits.

An example of a material event would be, for example a substantial fall or rise in equity markets over a short period of time.

For the avoidance of doubt, the results of this sensitivity do not replace the EV and VNB.

17. DISCLOSURE

17.1 Introduction

This Section sets out the minimum levels of disclosure that is required of the company's EV disclosures. In practice, it is expected that companies will disclose additional information over and above that specified here. A clear understanding of the EV and VNB results improves credibility in the public domain and aids valid comparisons across different companies.

17.2 Disclosure considerations

Ref 17.2.1

The EV should be segregated into Covered Business VIF and ANW.

Ref 17.2.2

If a company writes both Covered Business and other forms of business, it should be made clear in disclosure that the EV results are only in respect of Covered Business.

Ref 17.2.3

If it is not possible to segregate the tangible assets within the relevant company into that allocated to Covered Business and other business, the disclosure should make clear that the ANW is of the total company and not just the Covered Business. In such circumstances all the tangible assets of the company should be valued using the Israeli EV Rules and Guidance.

Ref 17.2.4

A statement regarding which group of individuals accept responsibility for the calculation of the EV, VNB, analysis of EV Profit and sensitivities should be included.

17.3 Structure and contents of EV disclosure

The EV disclosure document should be structured as follows:

1. Highlights and key performance indicators
2. EV limitations
3. Detailed EV results
4. Notes to the results
5. Reconciliations
6. EV methodology
7. EV assumptions
8. Sensitivity analysis
9. Audit/review report

17.4 EV limitations

Ref 17.4.1

Companies should make disclosures on the limitation of the EV.

For example, the following may be used:

“In calculating the EV which is compliant with the Israeli EV Rules and Guidance the EV will be in conformity with what is believed to be the current and proposed operating environment and the “most probable” future experience within this environment, it should be recognised that actual future experience will vary from that projected in the EV calculation.

Deviations from the parameters assumed in the EV projection could have a material impact on the result. These parameters include:

- *Management discretion*
- *Insurance regulations*

- *Reinsurance practices*
- *Accounting practices*
- *Taxation*
- *Economic factors*

In addition deviations from “most probable” experience are normal and to be expected. Even without any change in perceived environments and in parameters used to reflect them, actual results from year to year will vary from those projected due to normal random fluctuations.

It is important to note that the calculated EV is not representative of the company’s overall market value of the company or its life insurance subsidiaries and should not be interpreted as such.”

17.5 Detailed EV results

Ref 17.5.1

The Israeli EV balance sheet should be presented as follows:

TABLE 17.1**Embedded value balance sheet**

Component	Value (ILS m)
Adjusted net worth (ANW), consisting of:	XXX
- Free surplus	XXX
- Required capital	XXX
Value of in force business (VIF), consisting of:	XXX
VIF before EVFOG and EVCoC (Unadjusted VIF)	XXX
Provision for the time value of financial options & guarantees (EVFOG)	XXX
Provision for cost of capital (EVCoC)	XXX
Embedded value (ANW + VIF)	XXX

The Israeli EV value of new business should be presented as follows:

TABLE 17.2**Value of new business presentation**

Component	Value (ILS m)
Value of new business (VNB), consisting of:	XXX
VNB before NBFOG and NBCoC (Unadjusted VNB)	XXX
Impact of VNB on the time value of financial options & guarantees (NBFOG)	XXX
Impact of VNB on the cost of capital (NBCoC)	XXX

The amounts in table 17.2 should include both the VIF and ANW components of the VNB.

17.6 Notes to the results

Ref 17.6.1

A description of which proportion of the primary account GAAP equity relates to the EV, and which proportion of the primary account P&L relates to the analysis of EV profit should be disclosed.

This information will be used by analysts to determine the sum-of-the-parts approach. Analysts generally wish to understand how the EV relates to the primary account publication.

17.7 Reconciliations

Ref 17.7.1

A reconciliation of the ANW with the GAAP equity in the primary accounts should be disclosed.

17.8 EV methodology

Ref 17.8.1

The following should be disclosed:

- **Basis of preparation**
- **Covered Business**
- **Description of allowance for risk methodology**
- **Description of how economic assumptions have been set**
- **Description of how non-economic assumptions have been set**
- **Description of calculation of embedded value and value of new business**
- **Description of calculation of allowance for financial options and guarantees**
- **Description of analysis of EV profit**

17.9 EV assumptions

Ref 17.9.1

The following economic assumptions should be disclosed:

- **Risk-free rate**
- **All inflation assumptions, in particular expense inflation and medical claim inflation**
- **Asset mix assumptions.**

The following non-economic assumptions should be disclosed:

- **Tax rates**
- **Value of tax assets (if any)**
- **Within the expense analysis, the proportion of expenses allocated to acquisition, maintenance, development, investment management and claim events.**
- **Material demographic and policy-holder behaviour assumptions do not have to be disclosed for reasons of confidentiality, however the company should describe the basis for these assumptions and/or how they were determined.**

17.10 Sensitivities

Ref 17.10.1

This should include the results of the Sensitivities required to be disclosed plus the approach used to calculate the Sensitivities, as described in Section 16. This includes and sensitivities to reflect post valuation date events

17.11 Scenario analyses

Ref 17.11.1

Where a company has undertaken a scenario analysis then the material assumptions underlying that scenario must be disclosed, including how these deviate from best estimate and what the impact on the EV of these deviations has been.

17.12 Audit/Review report

Ref 17.12.1

The nature of any audit or review of the EV, VNB, analysis of EV Profit and sensitivities should be disclosed.

This can take several forms such as:

- A third party opinion that the methodology and assumptions are in line with the Israeli EV Rules and Guidance
- A third party opinion that the calculations are materially in line with the Israeli EV Rules and Guidance. This opinion may be limited in scope.

The audit / review may include a document to senior management highlighting the key issues arising and include recommendations.

17.13 Additional items to be included in disclosure

Companies should disclose further information if the Israeli Rules and Guidance indicate that such disclosure should be made in the individual

APPENDIX A - GLOSSARY

Adjusted Net Worth (ANW): This is the value of the Shareholder Equity of the company in which the Covered Business is written, less intangible assets related to the Covered Business (see chapter 5).

Analysis of EV Profit: An process to examine the key drivers where management has increased or reduced EV

Appraisal Value: The value of an insurance company with an allowance for Goodwill.

Certainty Equivalent approach: A risk neutral deterministic technique for valuing non-option cash flows, described in more depth in Section 7.

Company Net Assets: All Net Assets within the company which writes Covered Business

Cost of Capital: This is the cost associated with being required to hold capital to back the in-force Covered Business.

Covered Business: The business at the valuation date that is regarded by the Regulator as being life or health insurance business.

Embedded Value (EV): The sum of the adjusted net worth and the value of in-force business.

Embedded Value Operating Profit: A significant portion of Embedded Value Total Profit, but excluding items deemed to be less under management control in the short term, for example investment variances.

Embedded Value Total Profit: The increase in EV over the reporting period.

Financial Options and Guarantees: Features of assets and liabilities whose value changes asymmetrically given symmetric movements in financial markets

Goodwill: This represents a measure of the franchise value of the company i.e. its brand and its ability to write new business in the future.

Market-consistent Embedded Value (MCEV): There are various equivalent definitions of MCEV including:

- ANW plus market-consistent value of in force less market-consistent cost of capital.
- Market value of tangible assets less market-consistent value of in force Covered Business liabilities less market-consistent cost of capital

Market-consistent Embedded Value Principles: The guidelines in this document for the calculation of MCEV.

New business (NB): Business that is regarded by local insurance regulators as life or health insurance business, which was written during the reporting period.

Participating Portfolio: The official term is use in Israel for the asset portfolio that is segregated and held to back Life insurance policies that "participate in [investment] profits"

Reporting Period: The time period between the current EV calculation and the previous EV calculation.

Required capital: The amount of assets, which forms a subset of the adjusted net worth, whose distribution to shareholders is restricted as a result of risks associated with the Covered Business. It gives a measure of risk relating to the liabilities associated with the Covered Business.

Risk-free rate: The risk-free rate is the rate of interest required to compensate investors only for the time-value of money, e.g. for investments where there is no risk. This is taken to be the yield on appropriate government debt, proxied by the quarterly published vector of interest rates.

Risk Discount Rate: In traditional EV calculations, this is the rate used to discount future shareholder cash flows emerging from the Covered Business in order to determine the VIF.

Shareholder Equity: The value placed on equity in the company in which the Covered Business is written using Israeli General Accounting Accepted Practice.

Tangible Asset: Assets having a physical existence, such as cash, shares, equipment and real estate.

Value of in-force business (VIF): The present value of future shareholder cash flows projected to emerge in the future from the business in-force at the valuation date.

Value of new business (VNB): The present value of future shareholder cash flows projected to emerge in the future from the new business written during the last reporting period.

APPENDIX B – REFERENCES / RECOMMENDED READING

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