

# **The Implementation of Embedded Value (EV) Reporting in Israel: Myth and Reality**

Yoram Eden<sup>+</sup>

## **Abstract**

In recent years, we have witnessed increasing acceptance of Embedded Value (EV) reporting as the most robust measure of shareholder value for life and health insurance businesses. Therefore, the Commissioner of Insurance in Israel decided to require insurance companies to disclose the EV of their life, pension and health insurance business annually, beginning with the annual statements for FY 2007. Even though the insurance and financial community expected the publication of the EV data and emphasized its importance, the reaction of the capital market seemed to ignore the EV data. All things being equal, if an insurer is writing profitable new business, its market capitalization should exceed its EV. However, the market capitalization of all listed insurance companies in Israel is far below their reported EV, and the gap is growing.

The purpose of this article is twofold: a) I suggest several explanations for this apparent EV “puzzle,” both competing and complementary; b) I argue that although the question of whether the EV report and MCEV methodology really indicate the fair value of the insurance company remains controversial, the EV report contains data that gives better insights into the forces driving operating performance and the impact of management actions. The EV analysis should also be considered when evaluating management performance and remuneration schemes.

**Key Words:** Embedded Value (EV); Valuation; Life and health insurance; Best estimate assumptions; Liquidity Premium.

---

<sup>+</sup> Yoram Eden is vice president for academic affairs at the College of Management, Academic Studies (COMAS), Rishon LeZion 75190 Israel. The author can be contacted via e-mail: yeden@colman.ac.il.  
The author thanks participants of the 2012 ARIA meetings for constructive comments and suggestions. Any remaining errors are mine.

## I. Background and Introduction

**Background of EV Reporting.** The forerunner of Embedded Values (EV) was a methodological paper published by Jim Anderson in 1959, in which he 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 that reflects the shareholders' required rate of return and the degree of risk in the business being valued (Anderson, 1959). In recent years, we have witnessed increasing acceptance of EV as the most robust measure of shareholder value for life and health insurance businesses. EV-based reporting has become widespread in Europe, South Africa, Australia and Canada. It is gaining ground in Asia. There is a gradual move towards defined EV standards. In the UK, the insurance trade body (ABI) developed EV guidelines in the 1990s, and the CFO Forum published the European Embedded Value ("EEV") Principles and Guidance in 2004. The CFO reviewed this approach and recommended the implementation of the Market Consistent Embedded Value (MCEV) approach.

The main advantages of the EV method are:<sup>1</sup>

- EV recognizes shareholder value creation in the correct period. In particular, it recognizes profit at the point of sale.
- EV methodology gives a robust basis for new business that allows the recognition of the Value of New Business ("VNB") at the point of sale.
- Analysis of the change in EV during a period provides insights into the drivers of operating performance and the impact of management actions.
- Analysis of the EV's sensitivity to changes in assumptions helps to determine the materiality of the key risks to which the company is exposed, and focus the attention of management. The sensitivity analysis can be used at a later stage as input for economic capital requirements.
- 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 out over a long period.

On July 2010, the International Accounting Standards Board (IASB) published an exposure draft (ED) entitled "Insurance Contracts" to propose significant improvements in accounting methods for insurance contracts. The proposed IFRS 4 Phase II uses calculation techniques similar to those applied in embedded value and will, with potentially minor changes, convey similar information. The IASB developed the proposals jointly with the US Financial Accounting Standards Board (FASB).

---

<sup>1</sup> Based on the report of The Israeli Committee for the Determination of Embedded Rules and Guidance (August 2007)

The boards reached the same conclusions in many, but not all, areas. In light of the responses to the ED, the IASB announced in July 2012 that it expects to publish a review draft or a revised ED in the second half of 2012.<sup>2</sup> Hence, the implementation of the revised IFRS 4 is not expected in the near future. Until then, the EV reports will still be an available and important analytical tool.

**Institutional background.** Israeli insurance companies are allowed to operate in both casualty and liability insurance, and in life and health insurance (L&H). However, most of the value and the profits of Israeli's insurance companies are generated by their life and health insurance portfolio. The L&H insurance industry in Israel is highly concentrated, and the five leading insurance groups generate about 90% of the total premiums and reported EV.

**Implementation of EV reporting in Israel.** Until 2007, the Israeli insurance sector was subjected to fierce criticism for the limited informational content of the financial statements of insurance companies. Analysts and managers of insurance companies argued that the financial statements did not reflect properly the intrinsic value of the companies because they ignored the economic value of policies in the life and health insurance portfolios. Moreover, many argued that the insurers' income statements were misleading since most of the stated earnings stems from the existing portfolio, rather than reflecting value-creation.

Therefore, the Commissioner of Insurance in Israel decided to nominate a professional committee to prepare for EV reporting in Israel. The committee recommended applying the market-consistent embedded value (MCEV) methodology. The commissioner adopted these recommendations, and decided to require insurance companies to disclose the EV of their life, pension and health insurance business annually, beginning with the annual statements for FY 2007. The disclosure was to be included in an appendix to the financial statements. In order to enable insurers to implement EV disclosure properly, companies were allowed to include the disclosure for the year in the financial statements for the first quarter of the following year (e.g., the EV reports for the year ended December 2011, were published with the financial statements for Q1 2012, during late May 2012). The EV reports are reviewed by the insurer's auditors.

Even though the insurance and financial community had expected the publication of the EV data and emphasized its importance, there was no significant market reaction to its publication. Moreover, the market capitalization of all listed insurance companies was by far below their reported EV, and this gap is only getting larger, as demonstrated in Table 1 below. In other words, the reaction of the capital market seemed to ignore the EV data.

---

<sup>2</sup> The American Financial Accounting Standard Board (FASB) expects to publish an exposure draft in the second half of 2012.

**Table 1: Top 5 Insurance Groups in Israel: \* MV/BV\*\*, MV/EV and Adjusted MV/EV\*\*\*  
Ratios as at 31 December 2007-2011**

|                     | <b>Migdal</b> | <b>Clal</b> | <b>Harel</b> | <b>Menorah</b> | <b>Phoenix</b> | <b>Median</b> | <b>Avg.</b> |
|---------------------|---------------|-------------|--------------|----------------|----------------|---------------|-------------|
| <b>31 Dec. 2007</b> |               |             |              |                |                |               |             |
| MV/BV               | 185.9%        | 154.4%      | 162.6%       | 157.1%         | 164.2%         | 162.6%        | 165.8%      |
| MV/EV               | 76.6%         | 83.4%       | 122.6%       | 63.4%          | 99.5%          | 83.4%         | 86.2%       |
| Adj. MV/EV          | 63.6%         | 62.7%       | 90.2%        | 52.9%          | 70.0%          | 63.6%         | 66.5%       |
| <b>31 Dec. 2008</b> |               |             |              |                |                |               |             |
| MV/BV               | 139.7%        | 76.3%       | 81.5%        | 93.9%          | 40.7%          | 81.5%         | 91.4%       |
| MV/EV               | 55.0%         | 31.2%       | 50.6%        | 32.3%          | 24.3%          | 32.3%         | 41.2%       |
| Adj. MV/EV          | 46.2%         | 19.8%       | 32.0%        | 27.4%          | -2.0%          | 27.4%         | 28.7%       |
| <b>31 Dec. 2009</b> |               |             |              |                |                |               |             |
| MV/BV               | 180.1%        | 130.2%      | 125.1%       | 139.5%         | 109.8%         | 130.2%        | 141.0%      |
| MV/EV               | 68.2%         | 48.6%       | 55.1%        | 48.0%          | 48.9%          | 48.9%         | 55.4%       |
| Adj. MV/EV          | 61.5%         | 42.3%       | 43.6%        | 43.4%          | 34.1%          | 43.4%         | 47.1%       |
| <b>31 Dec. 2010</b> |               |             |              |                |                |               |             |
| MV/BV               | 163.8%        | 142.5%      | 133.7%       | 143.8%         | 119.5%         | 142.5%        | 143.1%      |
| MV/EV               | 65.3%         | 59.4%       | 75.5%        | 49.6%          | 59.9%          | 59.9%         | 62.2%       |
| Adj. MV/EV          | 58.5%         | 50.9%       | 56.8%        | 43.0%          | 44.7%          | 50.9%         | 52.0%       |
| <b>31 Dec. 2011</b> |               |             |              |                |                |               |             |
| MV/BV               | 120.1%        | 84.7%       | 83.7%        | 82.3%          | 93.6%          | 84.7%         | 95.3%       |
| MV/EV               | 50.9%         | 34.0%       | 41.8%        | 28.0%          | 47.8%          | 41.8%         | 40.9%       |
| Adj. MV/EV          | 44.5%         | 25.2%       | 29.3%        | 22.5%          | 31.6%          | 29.3%         | 31.7%       |

\* These 5 insurance groups hold more than 90% of the industry's EV.

\*\* MV/BV = Market Value to Book Value ratio.

\*\*\* Israeli insurance companies are held by listed holding companies. The adjusted MV reflects the market capitalization of the holding companies minus the BV of the holding companies' other investments (which were not included in the ANW calculation) and minus deferred profits (after tax) from long-tail P&C insurance.<sup>3</sup>

This study is organized as follows: The next section describes the EV model and the crucial assumptions that support the EV calculation. I then examine competing and complementary explanations for the wide gap between the EV and the MV of the Israeli insurers. I include international perspective the discussion. In the fourth section, I show how analysts could benefit from the EV reports to obtain deeper insights into the operating performance and key risks to which an insurance company is exposed. The final section summarizes and concludes the study.

## **II. The EV Model:**

**Definition.** Embedded value (EV) publications by Israeli insurance companies use EV balance sheets and VNB presentations.

<sup>3</sup> According to the current Israeli regulations, profits from long-tail policies are recognized in the income statement only after 3-5 underwriting years.

Embedded Value (EV). The EV measurement applied in Israel consists of four components:

$$EV = ANW + VIF - FOG - CoC$$

These components are defined as follows:

- Adjusted Net worth (ANW) is the reported amount of Shareholder Equity in the company where the covered business is written, less intangible assets related to the covered business (e.g. DAC or goodwill on the books).
- Value of in Force business(VIF) is the present value after taxation of future shareholder cash flows projected to emerge from the covered business in force on the valuation date.
- Allowance for the time value of financial options and guarantees (FOG).
- Allowance for the Cost of Capital(CoC) is the discounted tax expense on future investment profits stemming from the equity which is required to support the insurance policies' portfolio.

Note, however, that no Israeli insurance company has recognized an allowance for FOG. Hence, for practical purposes we may simplify the EV definition to:

$$EV = ANW + VIF - CoC$$

At the end of each reporting period, the materialized surplus arising from the VIF is added to the ANW component and subtracted from the VIF component.

**The Value of New Business (VNB).** VNB is the present value after taxation of future shareholder cash flows arising from new business written during the reporting period immediately prior the valuation date, adjusted for the cost of capital (NBCoC). Note that VNB is included in the calculation of VIF.

**Covered Business.** The covered business includes both life insurance (including pension insurance) and health insurance business as classified for regulatory reporting. All such business in force at the valuation date should be included. Short-term business such as group life and health coverage is included (provided that it fits the "covered business" insurance category).

Nevertheless, short-term (up to one year) individual business is not included in the covered business, even if it is classified as life or health insurance. Current examples of lines that fall outside this definition of "covered business" are personal accident travel insurance and provident funds business. These may be valued on an EV-type basis, but are not included within the covered business EV.

At the corporate (group) level, the EV covers life and health insurance subsidiaries within the group, including overseas subsidiaries.

### **The Main Economic Assumptions**

- a) Certainty Equivalent Approach. 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. The use of the certainty-equivalent approach means that there is no discretion when choosing assumptions for gross economic projection or the discount rate. Therefore, the key economic assumption is choosing the risk-free rate. The Commissioner of Insurance in Israel ruled that the risk-free rate applied for the EV measurement should be the published vector of **real** interest rates, stated in current pension fund valuations regulations in Israel. It should be noted that the published vector of interest is real, while the financial statements are stated in nominal terms, creating a need to adjust nominal terms to real ones.
- b) Best estimate assumptions. The best estimate assumptions should:
- Be set to give shareholders the mean financial outcome;
  - Examine past, current and expected future experience, and any other relevant data;
  - Be dependent on age, calendar year or policy year, if material.

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

The VIF should reflect the full costs of the ongoing life and health insurance operations including overhead expenses. The VNB should reflect the full acquisition costs associated with securing that business and the ongoing expenses associated with administering it, including its share of overhead expenses. Where expenses relating to the covered business are incurred outside of the insurance company, these should be included in the expense assumptions.

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

**Analysis of EV Profit.** The process of analyzing the EV profit is a key step in the actuarial control cycle. A breakdown of the movement in EV between successive reporting periods provides management (and analysts) with information about how the company has performed during the

year, relative to expectations in various categories. This helps in assessing how management has affected shareholder value. Table 2 below describes the main elements of the analysis.<sup>4</sup>

**Table 2: Analysis of EV Profits and the Change in the EV**

|                                                                                                                |              |
|----------------------------------------------------------------------------------------------------------------|--------------|
| <b>Opening EV reported as of 31 December 2007</b>                                                              | <b>*****</b> |
| - Adjustments to the opening balance for both ANW and VIF                                                      | ****         |
| - Effect of inflation                                                                                          | ****         |
| - Expected increase on old portfolio in real terms                                                             | ****         |
| - Contribution of new business (VNB)                                                                           |              |
| - The effect of changes in demographic and operating assumptions                                               | ****         |
| <b>EV Operating Profit</b>                                                                                     | <b>*****</b> |
| - Extraordinary items                                                                                          | ****         |
| - The effect of the changes in economic assumptions and the effect of deviation from the economic assumptions* | ****         |
| <b>EV Profit from covered business</b>                                                                         | <b>*****</b> |
| - Comprehensive profit (loss) from uncovered business                                                          | ****         |
| - Capital inflows (outflows)                                                                                   | ****         |
| <b>Total Change in EV</b>                                                                                      | <b>*****</b> |
| <b>Closing EV reported as of 31 December 2011</b>                                                              | <b>*****</b> |

\* These two components of the economic variance are presented together.

The published analysis also describes the sum that was transferred from the VIF and required capital to free surplus. This sum does not affect the total EV. That is why I preferred to omit this row from the analysis in Table 2.

### III. Explaining the Apparent Puzzle

In the four-year period (2008-2011), the five leading Israeli insurance companies lost about 31.2% of their market capitalization, even though they have increased their book value and EV by 19.7% and 44.8%, respectively, as demonstrated in Table 3 below. It is noteworthy that the TelAviv 100 share index declined by “only” 15.3% in this period.

**Table 3: Cumulative BV, EV and MV changes: 31 Dec. 2007-31 Dec. 2011  
In NIS\*000,000's**

|                                        | <b>Migdal</b> | <b>Clal</b> | <b>Harel</b> | <b>Menorah</b> | <b>Phoenix</b> | <b>Total</b> |
|----------------------------------------|---------------|-------------|--------------|----------------|----------------|--------------|
| BV as at 31 Dec. 2007                  | 3,381.2       | 3,585.7     | 2,933.1      | 1,643.7        | 2,247.0        | 13,790.7     |
| BV as at 31 Dec. 2011                  | 4,539.4       | 3,692.8     | 3,525.2      | 2,200.2        | 2,551.0        | 16,508.6     |
| Cumulative BV change                   | <b>34.3%</b>  | <b>3.0%</b> | <b>20.2%</b> | <b>33.9%</b>   | <b>13.5%</b>   | <b>19.7%</b> |
| Opening EV reported as at 31 Dec. 2007 | 8,212.2       | 6,643.4     | 3,891.0      | 4,074.0        | 3,708.0        | 26,528.6     |
| Closing EV as at 31 Dec. 2011          | 10,711.5      | 9,183.4     | 7,059.0      | 6,467.0        | 4,991.6        | 38,412.5     |

<sup>4</sup> I prefer to present the components of the EV change in an order which is different from the order that is published by the Israeli insurers.

|                                |               |               |               |               |               |               |
|--------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Cumulative EV change           | <b>30.4%</b>  | <b>38.2%</b>  | <b>81.4%</b>  | <b>58.7%</b>  | <b>34.6%</b>  | <b>44.8%</b>  |
| MV as at 31 Dec. 2007          | 6,286.5       | 5,537.3       | 4,770.5       | 2,581.9       | 3,689.5       | 22,865.7      |
| MV as at 31 Dec. 2011          | 5,451.8       | 3,126.9       | 2,951.0       | 1,810.8       | 2,388.2       | 15,728.7      |
| Cumulative MV change           | <b>-13.3%</b> | <b>-43.5%</b> | <b>-38.1%</b> | <b>-29.9%</b> | <b>-35.3%</b> | <b>-31.2%</b> |
| TA 100 index as at Dec. 2007   |               |               |               |               |               | 1,154.6       |
| TA 100 index as at Dec. 2011   |               |               |               |               |               | 978.5         |
| Cumulative Market index change |               |               |               |               |               | <b>-15.3%</b> |

\* 1 NIS is approximately 0.25 USD.

In a previous study, Eden and Zuckerman (2010) examined the data for the years 2007-2008, and suggested explanations for this EV “puzzle.” I have reviewed these suggested explanations in light of the new data gathered since that time. The main explanations, which not mutually exclusive, are:

1. Market inefficiency. The Israeli capital market suffers from a low level of analytical expertise regarding the insurance industry. Therefore, the capital market has not yet absorbed the real merits of the EV data.
2. The current financial crisis overshadows the informational content of the EV disclosure. Note that the EV reporting in Israel was launched just before the financial turmoil of 2008. In 2009-2010, it seemed that financial crisis was overcome but another world-wide financial crisis developed in 2011. Even though the financial crisis does not directly stem from insurance activities, it has indirect material impact on the insurance industry (e.g., the investments of the reserves).
3. Regulation requirements and liquidity difficulties of the main shareholders of the Israeli insurers: New regulations aimed at diminishing the degree of concentration in the Israeli economy forbids the main conglomerates in Israel from keeping their control over both financial (including insurance) companies and real companies. Hence, the main shareholders of two of the five leading insurers (Clal and Phoenix) are required to sell their control of the insurance companies. This regulatory requirement is coupled with severe liquidity difficulties experienced by those conglomerates. Moreover, the Italian Generali Group, the main shareholder of Migdal (the No. 1 Israeli insurance company), also suffers from severe financial difficulties, and has decided to sell its stake in Migdal.

While the leading Israeli insurers are “on the shelf,” available for immediate sale, severe regulation intimidated potential investors from taking control of Israeli insurance companies, even at relatively low prices. Hence, the detritions of the EV multiple (EV/MV) do not necessarily contradict the reports that Israeli insurers generated actual economic value during the four-year period, 2008-2011.

4. Disagreement. The market does not agree with some of the crucial assumptions of the MCEV calculation particularly with the “certainty equivalent approach” and the “best estimate assumptions” approach.

4.1 The certainty equivalent approach discounts future insurance earnings by the market risk-free rates. (This approach consistently applies the risk-free rate when measuring investment income.) However, most value appraisals of insurance companies that have been conducted in Israel recently applied higher discount rates that reflected liquidity and risk premiums (above the risk-free rates).

It is noteworthy that many European insurers applied an allowance for a liquidity premium above the risk-free rates in their 2008 year EV reports. The allowance ranged from 50 to 300 base points, as shown in Table 4 below:

**Table 4: European EV 2008 – Allowance for Liquidity Premium\***

| Company                      |                              | Liquidity premium for main territories<br>(base points, bps) |         |        |        |
|------------------------------|------------------------------|--------------------------------------------------------------|---------|--------|--------|
|                              |                              | UK                                                           | US      | Europe | Asia   |
| <b>Annuity business only</b> | Aviva                        | 150                                                          | 300     | 150*   |        |
|                              | Lloyds TBS                   | 154                                                          |         |        |        |
|                              | Prudential                   | 252                                                          |         |        |        |
|                              | Standard life                | 302                                                          |         |        |        |
| <b>All business</b>          | Aegon                        | 101-388                                                      | 109-606 | 45-55  | 82-365 |
|                              | Aviva (non-annuity business) |                                                              | 250     |        |        |
|                              | AXA                          | 50                                                           | 100     | 50     | 0-100  |
|                              | CNP                          |                                                              |         | 70     |        |
|                              | Eureko                       |                                                              |         | 50     |        |
|                              | Generali                     |                                                              |         | 50     |        |
|                              | Groupama                     |                                                              |         | 70     |        |
|                              | ING                          |                                                              |         | 0-60   |        |
|                              | KBC                          |                                                              |         | 50     |        |
|                              | Old Mutual                   |                                                              |         |        |        |
|                              | Storebrand                   |                                                              |         | 40-150 |        |
|                              | Vienna                       |                                                              |         | 50     |        |

\* Source: Ernst & Young, "European Embedded Value Results: 2008 year end", pp.13.

The allowance for liquidity premium decreased during the years 2009 and 2010 to an average level of 50 bps, but increased significantly at year end 2011. At year end 2011, 10 European companies had liquidity premiums in excess of 100 bps for certain regions or business, compared to only one company at year end 2010.<sup>5</sup> Some of the companies disclosed that they calculated the liquidity premium according to the formula recommended by the CFO/CRO Forum and QIS 5 [ $\text{Max}(0, 50\% * (\text{Spread} - 40\text{bps}))$ ]. However, in Israel, applying liquidity premiums is not at the discretion of the companies' management. All companies must apply the "dictated" risk-free discount rates (published by the Commissioner) without any further allowances.

<sup>5</sup> See "2011 Embedded Value Results: Generating Value" (Reynolds, 2012).

I conducted a sensitivity test on the 2011 EV results of one of the leading 5 insurers applying a liquidity premium of 3% (on top of the risk-free rates). The analysis yields a decrease of about 20% in the 2011 year end EV results<sup>6</sup>.

Hence, we may explain part of the gap between the MV and the EV by implicit market requirement for a liquidity premium in periods of financial stress.

Moreover, European insurers recognize an additional allowance due to the Cost of Residual Non-hedgeable Risk (CRNHR). Usually, the CRNHR as a cost of capital charge applied to the capital required to cover the non-hedgeable risks. The CRNHR applied by leading European insurers, including Allianz and ZFS, is equivalent to 4% charge on risk capital calculated at 99.5% confidence level<sup>7</sup>.

Israeli EV methodology does not recognize any allowance for CRNHR, thus ignoring the non-hedgeable risks completely.

4.2 According to the *best estimate assumptions*, the EV calculation is based on the assumptions that the future rate of early redemptions and moving to another insurer will be at the same level as in previous years. Recent legislation has facilitated the transfer of policyholders' savings from one insurer to another insurer or pension fund. One may expect that this legislation will have adverse effect on the profitability of Israeli insurers.

5. Contradiction between actuarial and accounting concepts: The EV report suggests new profit concepts: "Operating EV Profits" and "EV Profits."<sup>8</sup> The relationship between these concepts to the traditional GAAP concepts is not clear enough. A detailed reconciliation of the EV data to the GAAP is not included.<sup>9</sup> This confusion may diminish the market's ability to cope with the real merits of the EV disclosure.

Figure 1 below, shows the skittishness of EV profits relative to the "traditional" GAAP measures of profit.

---

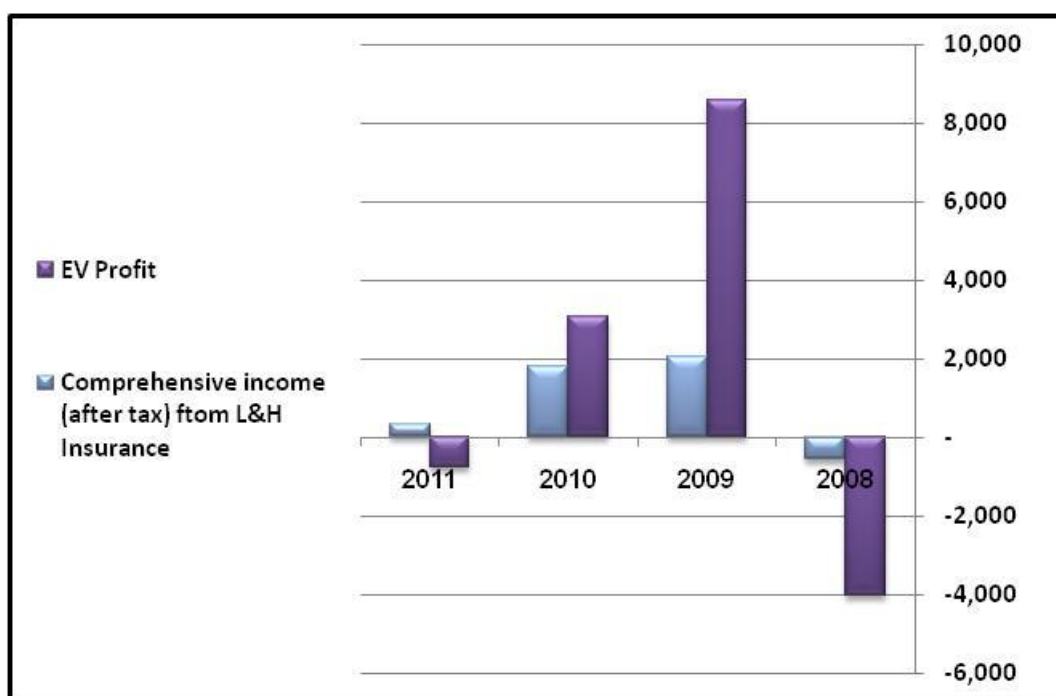
<sup>6</sup> Note that conducting this analysis requires data and actuarial calculations which are beyond the capacity of outsiders.

<sup>7</sup> It is noteworthy that the reported capital charge for the CRNHR is lower than the Solvency II framework.

<sup>8</sup> European insurers use the term of "EV Earnings" instead of "EV Profits."

<sup>9</sup> The EV report includes reconciliation of the ANW to the stated GAAP equity, but does not include any reconciliation of the EV profit (earnings) to the stated GAAP comprehensive income.

**Figure 1: EV Earnings vs. Comprehensive Income (after tax) from L&H Insurance:  
Cumulative Data for 2008-2011  
NIS\* 000's**



\* 1 NIS is approximately 0.25 USD.

**International Perspective.** Table 5 below displays data about the MV/EV multiple of 14 leading European life-insurers as at 31 December 2010. The group EV of the sample companies varies from about GBP 43,000 million (Allianz) to about GBP 5,000 million (Resolution, Swiss Life, Ageas and Storebrand).

**Table 5: Group EV vs. Market Capitalization as at 31 December 2010**

|                 |            |
|-----------------|------------|
| Allianz*        | 80%        |
| AXA             | 85%        |
| ZFS             | 110%       |
| Generali        | 92%        |
| Prudential      | 93%        |
| Aviva           | 72%        |
| CNP             | 66%        |
| Old Mutual      | 68%        |
| Legal & General | 73%        |
| Standard Life   | 67%        |
| Resolution      | 52%        |
| Swiss Life      | 57%        |
| Ageas           | 93%        |
| Storebrand      | 59%        |
| Average         | <b>76%</b> |
| Median          | <b>73%</b> |

---

Source: Deloitte (2011) – Market Consistent Embedded Value at a Turning Point, Fig. 8.

Table 5 shows that 13 of the 14 insurers, except Zurich Financial Services (ZFS),<sup>10</sup> were trading at a ratio lower than 1 EV/MV. However, the average and median of the EV/MV ratio are higher than those in the Israeli industry (presented in Table 1, above) during the same period.

Deloitte (2011) also indicates that since the start of the financial crisis (in Q4 2007) the life insurance industry (measured by the FTSE 350 Life Assurance Index) has consistently underperformed the market (measured by FTSE 350 Index).

However, we should note two major differences between the European life insurance industry and the Israeli industry that are relevant to our discussion. First, in Israel there is a mandatory framework for EV reporting (based on MCEV Principles), but European insurers published their EV reports using a variety of approaches. Deloitte (2011) examined a sample of 19 companies, and found that at the year-end 2010, only 11 companies reported under the MCEV Principles.<sup>11</sup> Four other companies reported under the EEV Principles using a market consistent approach, and the remaining four reported under the EEV Principles without being market consistent. In addition to the above mentioned EV methodologies, Aviva introduced a new variant called “Equivalent Embedded Value.”<sup>12</sup> In Deloitte’s (2011) view, “the combination of the complexity and volatility with the changes in methodologies does not help investors’ or analysts’ acceptance of this metric.”

Second, Deloitte (2011) concludes that investors do not believe in the growth prospects of the life insurance in Europe and are more interested in the potential of the emerging markets. Therefore, investors are discounting European-based insurers with no presence in those markets more heavily. However, this explanation is not applicable to the Israeli insurance industry, which operates almost exclusively in Israel.

#### **IV. Analyzing the EV report**

This study suggests that while EV reporting falls short in valuation, it still contains data that provides insight into the drivers of operating performance and the impact of management actions.

Let us examine the cumulative change in the reported EV of the five leading Israeli insurance groups during the period of four years 2008-2011.

---

<sup>10</sup> This exception may be partially explained by having a substantial non-life insurance business that is not reflected in the embedded value.

<sup>11</sup> MCEV Principles that were published by the CFO Forum in October 2009 (CFO, 2009a, 2009b).

<sup>12</sup> Aviva's analyst presentation as at January 2011.

**Table 6 – Analysis of EV Earnings:**  
**Value Published in 2007 Compared to Value as of 31 December 2011**  
**NIS 000,000's**

|                                                 | <b>Migdal</b>    | <b>Clal</b>      | <b>Harel</b>     | <b>Menorah</b> | <b>Phoenix</b> | <b>Total</b>     |
|-------------------------------------------------|------------------|------------------|------------------|----------------|----------------|------------------|
| <b>Opening EV reported as at 31 Dec. 2007</b>   | <b>8,212.2</b>   | <b>6,643.4</b>   | <b>3,891.0</b>   | <b>4,074.0</b> | <b>3,708.0</b> | <b>26,528.6</b>  |
| Technical corrections                           | (210.7)          | 193.7            | (4.8)            | 43.0           | (14.8)         | <b>6.4</b>       |
| Inflation adjustment                            | 1,108.8          | 910.4            | 591.3            | 592.0          | 471.8          | <b>3,674.3</b>   |
| IFRS adjustment                                 | 100.0            | (4.4)            | -                | -              | -              | <b>95.6</b>      |
| <b>Adjusted Opening MCEV as at 31 Dec. 2007</b> | <b>9,210.3</b>   | <b>7,743.1</b>   | <b>4,477.5</b>   | <b>4,709.0</b> | <b>4,165.0</b> | <b>30,304.9</b>  |
| Profit from existing business consisting of:    |                  |                  |                  |                |                |                  |
| Operating and demographic assumptions changes   | 97.0             | 59.1             | 569.1            | 490.0          | 452.8          | 1,668.0          |
| Expected return on VIF                          | 1,347.3          | 1,024.0          | 720.1            | 641.0          | 547.6          | 4,280.0          |
| Expected return on ANW                          | 195.5            | 135.5            | 125.6            | 61.0           | 83.6           | 601.2            |
| Operating experience variances                  | 468.0            | 32.2             | 82.1             | (323.0)        | 49.8           | 309.1            |
| Subtotal                                        | <b>2,107.8</b>   | <b>1,250.8</b>   | <b>1,496.9</b>   | <b>869.0</b>   | <b>1,133.8</b> | <b>6,858.3</b>   |
| Contribution from new business                  | <u>1,447.6</u>   | <u>1,457.0</u>   | <u>1,596.9</u>   | <u>986.0</u>   | <u>590.1</u>   | 6,077.6          |
| <b>EV Operating Earnings</b>                    | <b>3,555.4</b>   | <b>2,707.8</b>   | <b>3,093.8</b>   | <b>1,855.0</b> | <b>1,723.9</b> | <b>12,935.9</b>  |
| Profit (loss) from extra-ordinary items         | (165.0)          | (97.0)           | (90.0)           | 18.0           | (44.0)         | (378.0)          |
| Economic variances                              | <u>(1,777.9)</u> | <u>(1,353.3)</u> | <u>(1,001.5)</u> | <u>(198.0)</u> | <u>(972.3)</u> | <u>(5,303.0)</u> |
| <b>EV Earnings</b>                              | <b>1,612.5</b>   | <b>1,257.5</b>   | <b>2,002.3</b>   | <b>1,675.0</b> | <b>707.6</b>   | <b>7,254.9</b>   |
| Capital inflows (outflows)                      | (244.1)          | (244.0)          | 440.3            | (15.0)         | 313.0          | 250.2            |
| Profit (loss) from uncovered business           | <u>132.6</u>     | <u>426.7</u>     | <u>141.9</u>     | <u>97.0</u>    | <u>(194.0)</u> | <u>604.2</u>     |
| Total EV changes                                | 1,501.0          | 1,440.2          | 2,584.5          | 1,757.0        | 826.6          | 8,109.3          |
| Miscellaneous                                   | <u>0.2</u>       | <u>0.1</u>       | <u>(3.0)</u>     | <u>1.0</u>     | -              | <u>(1.7)</u>     |
| <b>Closing EV as at 31 Dec. 2011</b>            | <b>10,711.5</b>  | <b>9,183.4</b>   | <b>7,059.0</b>   | <b>6,467.0</b> | <b>4,991.6</b> | <b>38,412.5</b>  |

\* 1 NIS is approximately 0.25 USD.

Subtracting the components of capital inflows (outflows) and the profit (loss) from uncovered business, and rearranging the data, we can identify the major components of the change (from 2007 to 2011) as shown in Table 7 below:

**Table 7 – Analysis of EV changes inCPI-Adjusted NIS  
Value Published in 2007 Compared to Value as of 31 Dec. 2011  
NIS 000,000's**

|                                                           | <b>Migdal</b>         | <b>Clal</b>           | <b>Harel</b>          | <b>Menorah</b>        | <b>Phoenix</b>        | <b>Total</b>           |
|-----------------------------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|
| <b>Closing EV as at 31 Dec. 2011</b>                      | <b>10,711.5</b>       | <b>9,183.4</b>        | <b>7,059.0</b>        | <b>6,467.0</b>        | <b>4,991.6</b>        | <b>38,412.5</b>        |
| Capital inflows (outflows)                                | (244.1)               | (244.0)               | 440.3                 | (15.0)                | 313.0                 | 250.2                  |
| Profit (loss) from uncovered business                     | 132.6                 | 426.7                 | 141.9                 | 97.0                  | (194.0)               | 604.2                  |
| <b>Adjusted closing EV as at 31 Dec. 2011</b>             | <b>10,823.0</b>       | <b>9,000.7</b>        | <b>6,476.8</b>        | <b>6,385.0</b>        | <b>4,872.6</b>        | <b>37,558.1</b>        |
| <b>Adjusted Opening EV as at 31 Dec. 2007</b>             | <b><u>9,210.3</u></b> | <b><u>7,743.1</u></b> | <b><u>4,477.5</u></b> | <b><u>4,709.0</u></b> | <b><u>4,165.0</u></b> | <b><u>30,304.9</u></b> |
| Total adjusted EV changes                                 | <b>1,612.7</b>        | <b>1,257.6</b>        | <b>1,999.3</b>        | <b>1,676.0</b>        | <b>707.6</b>          | <b>7,253.2</b>         |
| Expected return on both VIF and ANW                       | 1,542.8               | 1,159.5               | 845.7                 | 702.0                 | 631.2                 | 4,881.2                |
| Contribution from new business                            | 1,447.6               | 1,457.0               | 1,596.9               | 986.0                 | 590.1                 | 6,077.6                |
| Economic variances                                        | (1,777.9)             | (1,353.3)             | (1,001.5)             | (198.0)               | (972.3)               | (5,303.0)              |
| Operating and demographic assumptions changes             | 97.0                  | 59.1                  | 569.1                 | 490.0                 | 452.8                 | 1,668.0                |
| experience variances                                      | 468.0                 | 32.2                  | 82.1                  | (323.0)               | 49.8                  | 309.1                  |
| Profit (loss) from extra-ordinary items and miscellaneous | <u>(164.8)</u>        | <u>(96.9)</u>         | <u>(93.0)</u>         | <u>19.0</u>           | <u>(44.0)</u>         | <u>(379.7)</u>         |
| Total adjusted EV changes                                 | <b>1,612.7</b>        | <b>1,257.6</b>        | <b>1,999.3</b>        | <b>1,676.0</b>        | <b>707.6</b>          | <b>7,253.2</b>         |

The key components of the change were the contribution from new business and the negative economic variance, which offset most of the added value generated from the new business.

The economic variance reflects two components: investment variance (the effect of deviation from economic assumptions) and the effects of changes in the risk-free rates during the period(the effect of changes in the economic assumptions). The published EV reports do not disclose the size of each component.<sup>13</sup>For all practical purposes, we may assume that most of the economic variance stems from the investment variance.The investment variance measures the difference between the actual investment gains and the expected gains which would be achieved had insurers invested the reserves in available risk-free assets.

Table 8 shows that the management's investment decisions to diverge from risk-free assets towards risky assets did not prove itself. The rewards for taking the investment risks during the period 2008-2011 were negative. In a period of 4 years (2008-2011) the industry, on average, destroyed about 17.5% of its EV as at end 2007 because of its investment decisions.Only one company (Menorah) performed reasonably, but its investment variance was still negative.

<sup>13</sup> Note that European insurers are also not obliged to split the impact on the EV of these two components. This approach lacks the transparency needed to understand the genuine impact of market movement as opposed to management decisions.

**Table 8: Investment Variance 2008-2011**

|                                                            | Migdal | Clal   | Harel  | Menorah | Phoenix | Average | Median |
|------------------------------------------------------------|--------|--------|--------|---------|---------|---------|--------|
| Cumulative Investment variance as % of 2007 year end EV    | -19.3% | -17.5% | -22.4% | -4.2%   | -23.3%  | -17.5%  | -19.3% |
| Annual rate of investment variances (below risk-free rate) | -5.2%  | -4.7%  | -6.1%  | -1.1%   | -6.4%   | -4.7%   | -5.2%  |

While all 5 leading Israeli insurers “destroyed” EV with their investment decisions, they successfully created embedded value by obtaining new business as demonstrated in Table 9 below:

**Table 9 – Contribution to the EV from New Business**

|                                                                             | Migdal | Clal  | Harel | Menorah | Phoenix | Average | Median |
|-----------------------------------------------------------------------------|--------|-------|-------|---------|---------|---------|--------|
| Cumulative contribution from new business as percentage of 2007 year end EV | 15.7%  | 18.8% | 35.7% | 20.9%   | 14.2%   | 21.1%   | 18.8%  |
| Annual rate of contribution                                                 | 3.7%   | 4.4%  | 7.9%  | 4.9%    | 3.4%    | 4.9%    | 4.4%   |

In order to obtain better insight to the relationship of the new premiums generated to the EV contributed, I examined the ratio of the VNB (in life and health insurance, not including pensions fund business), to the new recurrent premiums generated in each of the four years 2008-2011. Note that this analysis for the first premiums collected from new policies (issued in the current year) should be separated from the total volume of the collected premiums. Then, the recurrent premium is separated from the total volume of the new premium.

Table 10 shows that in 2011 the industry's VNB multiple (VNB/new recurrent premium) was about 0.43 (i.e., each dollar collected from new policy contributes on average 43 cents to the EV). The multiple varies between companies and years. The intuition behind this multiple is that only the risk and the management fees components of the premium are contributing value to the insurer. The savings component by itself, does not create any value for the insurer.

Some European insurers include the calculation of the “New Business Margin” (i.e., the ratio of the VNB to the present value of new business premiums) in their EV reports. However, since the Israeli insurers do not publish the present value of the premiums, we cannot apply this analysis in the discussion.

**Table 10: The VNB\*/New Recurrent Premium Ratio: 2008-2011**

|                       | Migdal      | Clal        | Harel       | Menorah     | Phoenix     | Total        | Median      |
|-----------------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|
| <u>2011</u>           |             |             |             |             |             |              |             |
| VNB                   | 302         | 296         | 395         | 95          | 199         | 1,288        |             |
| New recurrent premium | <u>813</u>  | <u>694</u>  | <u>600</u>  | <u>249</u>  | <u>418</u>  | <u>2,774</u> |             |
| <b>VNB Multiple</b>   | <b>0.37</b> | <b>0.43</b> | <b>0.66</b> | <b>0.38</b> | <b>0.48</b> | <b>0.46</b>  | <b>0.43</b> |
| <u>2010</u>           |             |             |             |             |             |              |             |
| VNB                   | 343         | 338         | 315         | 107         | 161         | 1,263        |             |
| New recurrent premium | <u>780</u>  | <u>617</u>  | <u>525</u>  | <u>238</u>  | <u>383</u>  | <u>2,543</u> |             |

|                                        |             |             |             |             |             |              |             |
|----------------------------------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|
| <b>VNB Multiple</b>                    | <b>0.44</b> | <b>0.55</b> | <b>0.60</b> | <b>0.45</b> | <b>0.42</b> | <b>0.50</b>  | <b>0.45</b> |
| <u>2009</u>                            |             |             |             |             |             |              |             |
| VNB                                    | 230         | 272         | 294         | 123         | 101         | 1,020        |             |
| New recurrent premium                  | <u>634</u>  | <u>525</u>  | <u>485</u>  | <u>228</u>  | <u>301</u>  | <u>2,173</u> |             |
| <b>VNB Multiple</b>                    | <b>0.36</b> | <b>0.52</b> | <b>0.61</b> | <b>0.54</b> | <b>0.34</b> | <b>0.47</b>  | <b>0.52</b> |
| <u>2008</u>                            |             |             |             |             |             |              |             |
| VNB                                    | 217         | 135         | 189         | 72          | 68          | 681          |             |
|                                        | <u>668</u>  | <u>576</u>  | <u>393</u>  | <u>233</u>  | <u>430</u>  | <u>2,300</u> |             |
| <b>VNB Multiple</b>                    | <b>0.32</b> | <b>0.24</b> | <b>0.48</b> | <b>0.31</b> | <b>0.16</b> | <b>0.30</b>  | <b>0.31</b> |
| <b>4 year average</b>                  | <b>0.37</b> | <b>0.43</b> | <b>0.59</b> | <b>0.42</b> | <b>0.35</b> | <b>0.43</b>  | <b>0.42</b> |
| * Not including pension fund business. |             |             |             |             |             |              |             |

The data presented in Table 11 below summarizes the analysis and may enable us to benchmark the management performance in each of the five leading companies, compared to the competition. The performance of two companies (Harel and Menorah) was much better than the other three companies. Harel leads in contribution of new business while Menorah minimized the investment variance. Note that the two leading companies in Israel (Migdal and Clal), which generated about 49% of the earned premiums in L&H, lagged behind the industry average.

**Table 11 – Performance Evaluation (2008 – 2011)**

|                                                             | <b>Migdal</b> | <b>Clal</b> | <b>Harel</b> | <b>Menorah</b> | <b>Phoenix</b> | <b>Average</b> | <b>Median</b> |
|-------------------------------------------------------------|---------------|-------------|--------------|----------------|----------------|----------------|---------------|
| Annual rate of EV growth in real terms                      | 4.1%          | 3.8%        | 9.7%         | 7.9%           | 4.0%           | 5.9%           | 4.1%          |
| Annual rate of investment variances (below risk-free rates) | -5.2%         | -4.7%       | -6.1%        | -1.1%          | -6.4%          | -4.7%          | -4.6%         |
| Annual rate of VNB's contribution                           | 3.7%          | 4.4%        | 7.9%         | 4.9%           | 3.4%           | 4.9%           | 5.1%          |

It is noteworthy that while the senior executives of the Israeli insurance companies are generously compensated, none of the Israeli insurers use EV measures when setting remuneration schemes for top management.

## **V. Concluding Remarks**

Investors and analysts have long been frustrated by their inability to elicit useful information from insurance companies' financial statements. The EV reports disclose financial and actuarial data that is not available to investors and analysts. The preparation of the EV reports requires substantial efforts and costs from insurers, which is why the companies were allowed to include the EV report for a given year in the financial statements for the first quarter of the following year (e.g., the EV reports for the year ended Dec. 2011 were published with the financial statements for Q1 2012, in late May 2012).

However, the capital market seems to completely ignore the EV data. The market capitalization of all listed insurance companies in Israel is by far below their reported EV, and the gap is only

increasing. I believe that even though the EV report falls short in valuation, it still contains data that provides better insights into the drivers of operating performance and the impact of management actions. The EV analysis should also be considered when evaluating the management performance, and in remuneration schemes.

The International Accounting Standards Board (IASB) together with the American Board (FASB), are facing difficulties in their efforts to revise accounting standards dealing with insurance contracts. The Israeli lesson may prove that bridging the gap between actuarial measurements and accounting measurements is not an easy task.

## **References:**

Anderson, J.C.H. (1959). "Gross Premium Calculations and Profit Measurement for Non-Participating insurance," *Transactions of the Society of Actuaries*, XI: 357-394.

Deloitte (July 2012), "Market Consistent Embedded Value at a Turning Point," Financial Services News & Publications/Deloitte UK.

Doherty, N.A., and G. Dionne (1993). "Insurance with Undiversifiable Risk: Contract Structure and Organizational Form of Insurance Firms," *Journal of Risk and Uncertainty* 6:187-203.

Eden Y. and Ben-Ami Zuckerman (2010), "Puzzle of the Embedded Value," *Quarterly Banking Review*, 167: 14-39 (Hebrew).

Ernst & Young, (2009) "European Embedded Value Results: 2008 year end".

European CFO Forum, (2004), "*EEV Principles, Guidance and Basis for Conclusions*".

European CFO Forum, (2009a), "*Market Consistent Embedded Value Principles*".

European CFO Forum, (2009b) "*Market Consistent Embedded Value, Basis for Conclusions*".

Israeli Committee for the Determination of Embedded Rules and Guidance (2007). "Embedded Value Rules and Guidance," *Towers Perrin-Tillinghast*  
<http://ozar.mof.gov.il/hon/2001/insurance/memos/2007-1-11a.pdf>

Reynolds S., R. See Toh, E. McWilliam, M. Cocke, and P. Simpson (2012), "*Embedded Value Results Generating Value*", Milliman EV Publication,  
<http://publications.milliman.com/publications/life-published/pdfs/2011-embedded-value-results.pdf>.