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Session 53D
Embedded (Economic) Value versus Fair Value versus U.S. GAAP

Track: Financial Reporting

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Summary: Key practitioners debate the pros and cons of three alternative methodologies evolving in the life insurance industry as meaningful financial metrics, as measures of shareholder-value creation and as pricing tools. Each panelist describes a preferred metric, emphasizing uses and advantages, critiques the other metrics and has the opportunity to challenge the other viewpoints. Attendees gain a clearer understanding of each financial measurement metric and are better able to contrast each approach in relation to their own experience and company situation.

MR. DANIEL J. KUNESH: This is a friendly debate on the topic, "Embedded (Economic) Value versus Fair Value versus U.S. GAAP". Our speakers will debate the pros and cons of three alternative methods that have evolved or are currently evolving in the life insurance industry as meaningful financial metrics, as measures of shareholder-value creation and as pricing tools. Each speaker will describe his preferred method, emphasizing the uses and advantages of the method, and each has been asked to vigorously critique the other methods.

First of the debaters, defending embedded value, will be Hubert Mueller of Tillinghast in Hartford. He is the leader of his firm's financial management practice for the Americas. He has been with Tillinghast since 1986. Aside from being a

Note: The chart(s) referred to in the text can be found at the end of the manuscript.

Fellow of our Society and a member of the American Academy of Actuaries, Hubert is also a qualified German actuary and a member of the German Actuarial Association. He is a member of the Society's Risk Management Task Force and leads the subgroup on economic capital. Hubert is no stranger to embedded value, having led many of the projects for Tillinghast worldwide.

Our second speaker, defending United States GAAP, will be Ken LaSorella. Ken is vice president of U.S. GAAP for Sun Life Financial in Wellesley Hills, Mass. He is responsible for all technical actuarial aspects of U.S. GAAP for the company worldwide. In addition, he's heavily involved with Sun Life's embedded value work. Ken has been with Sun Life for a total of 29 years, with a brief stint at KPMG. Ken is a member of the American Academy of Actuaries Life Financial Reporting Committee and is a co-chair of the Academy's P-GAAP Monograph Working Group.

The third speaker, defending fair value, is Morris Chambers, who retired last year after a very illustrious 43-year career with London Life of Canada as senior vice president and senior actuary in the corporate area. The latter half of his career was devoted to financial reporting and capital analysis. Morris is a past president of the Canadian Institute of Actuaries (CIA) and the International Actuarial Association (IAA). He is a past board member and vice-president of the Society. Currently, he chairs two CIA committees and serves on four committees for the IAA. He has been the CIA representative on the IAA Committee on International Insurance Accounting and on the Committee on Insurance Regulations since 1996. Morris is currently a candidate for the office of president for the Society.

MR. HUBERT B. MUELLER: Thank you, Dan. I'll start off with a few of the basics behind the topic of embedded value as well as economic value in some areas, and I'll explain the relationship between the two. I'll also comment on some of the differences and some of the advantages of embedded value versus fair value versus U.S. GAAP.

Sometimes the terms "embedded value" and "appraisal value" and maybe even "market value" are used side by side. Chart 1 gives you an idea of what they are and what they are not. Embedded value really has two major components—the value of the in-force business and adjusted net worth. Embedded value does not include the value of future business. If you add that in, you'd get the typical appraisal value. So, for example, if you are buying or selling companies, typically the valuation is an appraisal value, because you're also including the future sales potential of the company that you're buying or selling.

Then there's the difference between an appraisal value and what the company may be trading at in the market at the current point in time. Historically, that difference has been positive (market capitalization exceeds appraisal value), but if you look at the marketplace right now, both here as well as in Europe, you would probably find that the difference between the appraisal value and the market value is negative for a lot of companies. The valuations of companies relative to embedded values or

appraisal values at historic levels have dropped and are now trading closer to embedded value, just because of the way the equity markets have gone worldwide. Insurers haven't been able to escape that.

The key behind the embedded value concept is not so much the end-of-year value—but how much and why the value changed from point A at the beginning of the year to point B at the end of the year. If you look at the major components in terms of the change, the first is the expected return on the opening value, which is really just the beginning of the year balance multiplied by the risk rate of return. Note the value increases because you have the rest of your profits now one year closer. Hence, there is an adjustment for this year's profit. You either retain this profit or pay it out as a shareholder dividend, so there may be some capital movement.

The major component of change is the value of new business written in the current year. The current year's new business at the end of the year is typically disclosed along with the total end-of-year embedded value.

There are also variances in the assumptions. If a variance is only evident in the current year, it would have an impact on at least this year's numbers. If it is more of a permanent change in assumptions, you would also change future assumptions. For example, a few years ago companies reduced the equity return assumption, not just for the current year, but also for all future years as well. So that had an impact on how the in-force was being valued.

To give you more background on the components of embedded value, the adjusted net worth can be derived from information contained in the statutory balance sheet. It includes capital and surplus and the asset valuation reserve (AVR). Sometimes it includes the interest maintenance reserve (IMR); sometimes the IMR is shown as part of the value of the in-force. Hence, "free surplus"—represented by adjusted net worth (and excluding required capital)—is marked-to-market and taxed as if it were released to shareholders. Really, embedded value is nothing but a shareholder view of the future profits inherent in the company.

There are some adjustments to this value. One involves assets related to unauthorized reinsurance, which is not on the statutory books. If the reinsurer is in good standing at the time of the valuation, this would be added back in. Agent balances sometimes are added back in as well.

Target surplus is an important concept for embedded value. Typically companies will include target surplus (also termed required capital) with adjusted net worth. But the cost is typically based on the difference between the risk discount rate, which is being used for the embedded value calculation, and the after-tax investment return on the assets supporting capital.

Theoretically, if your risk discount rate is equal to your after-tax return, capital

would have no cost. While it is easy to prove mathematically, such is not the reality. Generally, you'll have a four- to five-percent spread between the risk discount rate that you're using and the after-tax return on capital. So capital has a cost, just like when you're pricing capital and the cost thereof. The formula for required capital is typically based on either regulatory risk-based capital (RBC) or a rating agency capital standard. For example, if a company has an AA Standard & Poor's (S&P) rating, it may use something like 150% of the S&P formula amount, or an equivalent to that amount.

Value of in-force should be familiar to the actuarial audience here. If you've done any pricing or any financial projections, you know how to project future profits from the in-force. Embedded value doesn't mean that you're doing something completely new; you're just combining what you're doing and putting it on a consistent framework for modeling. The assumptions should be realistic rather than conservative, because conservatism is embedded in the risk discount that you're using.

New business profitability is an inherent part of embedded value. I said earlier that embedded values don't include the value of future new business. However, embedded value at the end of the year does include the value of the current year's sales.

When companies use embedded value as a methodology, it introduces greater rigor into the pricing evaluation process. Many companies have two totally separate departments dealing with these issues. They have people using a set of pricing assumptions that may be five years old, and people doing valuations that may be much closer to current experience assumptions. Embedded value forces you to look at both of these two functions with an eye toward reconciling the two. It helps to answer questions like, "If I put all my pricing assumptions into my in-force model, does it cover 100% of actual expenses?" Obviously you want to include the acquisition and maintenance expenses on new business. But often we find if you add up all the pieces, you only get to 75 or 80% of total expenses. Companies don't really recognize it until I put all the pieces together.

Chart 2 shows some sample numbers of the typical components of change that you look at during the year. Assume the embedded value at the beginning of the year was 321. Maybe you added a model that you didn't have the prior year. There are some assumption changes. Your expected return for the year is the beginning-of-year embedded value multiplied by the risk discount rate. You have to then add in your new business value for the current year's production, and the effect of certain other variances. Typically there are some unexplained variance items, but they should be small, no more than one or two percent. That gives you an ending number. Again, the value is not so much the ending number itself, but how you get from the beginning to the ending number and trying to find out, by line of business, whether you added or destroyed value.

There are two methodologies commonly employed when setting risk discount rates. The more prominent one is to use the risk-free rate plus a margin, which is supposed to represent the risk from a shareholder's perspective of investing in the insurance business, rather than just buying risk-free treasury instruments. What we usually see in the marketplace is a spread of about three to four percent between the risk discount rate and the risk-free rate.

There is a debate on what is really a risk-free rate. The risk-free rate probably wouldn't be just a Treasury rate. The current Treasury rate is 3.4 %, so it would be very low. The risk-free rate may be another 50 or 60 basis points above that, to properly reflect the liquidity swap curve, so maybe it's four percent. Let's assume it's four percent, then a spread of three to four percent would get you to a seven- to eight-percent risk discount rate. If you look at what companies were disclosing for embedded values with 2002 ending values, you will see risk discount rates in the range of seven to 8.5%.

Some companies consider the risk discount rate to be the weighted average cost of capital. In that case, you'd also have to know your cost of debt, and mix the cost of debt with the cost of equity. The risk discount rate, which should vary by product line, goes into risk-adjusted pricing. You want a higher discount rate for riskier products. For example, a variable annuity product, which is very much equity-market contingent for profits, should command a higher return than a term product, where the primary variability is really on mortality and not in the capital markets.

The sensitivities typically include risk discount rates, the level of target surplus, investment return, mortality, morbidity, lapses and expenses. Increasingly, companies are also doing stress tests because we are in volatile times. Companies look at what happens if they move the equity return up or down from the current level, and maybe even include an interest rate shock. We can't go much lower than where we are today, although the Japanese probably would think differently. However, companies usually only disclose risk discount rates and the level of target surplus; disclosure of the other parameters is rare. Companies do disclose the economic assumptions that they've used in embedded value: the risk discount rate, the investment return, the tax assumption and the required capital. But they certainly won't show you what lapse rate or what mortality assumption is used, because any competitor could rebuild the product on that basis.

So why did embedded value come about and why is it not as prevalent here in this marketplace as it is on a worldwide basis? First of all, embedded value started in the Anglo-Saxon countries—U.K., Australia, and South Africa—where it's generally accepted as part of their external financial reporting. One of the reasons is that all those markets don't have U.S. GAAP. We are the only market with a U.S. GAAP paradigm. These countries only have statutory reporting and, just like in our market, statutory reporting is much more focused on solvency than it is on showing value. So they implemented embedded value much earlier. Increasingly it is used

as a performance measurement tool by multinationals. You can go to any of these companies' Web sites and you will find their embedded values being disclosed. Further, these companies also discuss their embedded value results with the analysts.

One of the key advantages of embedded value is that it is a consistent evaluation of performance across regions. If you are a multinational, you have no other way to compare performance across different territories or across different countries. You can't really depend on statutory balance sheets as a meaningful source of financial performance.

There was very little application in North America until recently. The Canadians started implementing embedded value about two or three years ago. In the United States, it's been primarily used by subsidiaries of multinationals. The only major exception to that rule, in terms of disclosing embedded values, is Hartford Life, which I would consider more of an international company rather than a domestic company. They disclose the embedded value of their variable annuity business each quarter to the analysts.

I think U.S. companies will be increasingly going toward embedded value for many reasons. There are pressures from the market. There are pressures from the analysts. The analysts are increasingly asking questions about U.S. GAAP. One of the problems with U.S. GAAP is that, if you look at U.S. GAAP earnings for the current quarter or the current year, you don't really know how much comes from current performance and how much relates to past performance. You also don't know, if there's a bad performance in the year, how much of the effect is included in the current embedded value and how much is spread out into the future.

Embedded value also provides much better insight into the business. You can immediately recognize whether you have added value or not. At the point of sale you can show an increase in embedded value, even if on a statutory basis it doesn't show. This is also a shortcoming with U.S. GAAP.

Now let us compare embedded value with fair value. I will also use the term "economic value," because embedded value is actually moving to the next stage. Clearly, we are living in a volatile market environment, so some of the techniques that traditionally have been used with embedded values need to be enhanced—for example, the evaluation of options and guarantees.

Let's take guaranteed minimum death benefits (GMDBs) and variable annuities. Valuation methodology is being enhanced because an embedded value per se is a deterministic projection. So you need to calculate the cost of your guarantees in a stochastic model in an appropriate way and then plug that cost back into your deterministic model. Otherwise, you would have no cost associated with the guarantee. If you start out with the fund equal to the guarantee and project at a seven-or eight-percent equity return, you are never going to see a cost of the

guarantee.

In adjusting the risk discount rate by riskiness of a business, I think that term business should be discounted at lower rates than variable annuity business. I see embedded value more as a financial reporting methodology, whereas fair value is more of an accounting standard. Given the debate that we've had in the U.S. marketplace, a fair value mindset is still a ways off, perhaps a minimum of three to four years. Fair value accounting is based on market-consistent valuation techniques, but it excludes certain items like goodwill. In addition, I don't see the cost of capital reflected in fair value, though there are some parallels between the two methodologies. You can actually show that embedded value is equal to fair value equity if there is the right relationship between risk discount rates, cost of capital and the risk inherent in the business.

Let's compare it to U.S. GAAP. I think one of the key differences between statutory, U.S. GAAP and embedded value is the manner in which profit is recognized. Under statutory, there's no recognition of any expenses associated with the sale of new business. Basically you experience a surplus strain with the sale of any policy in the United States. So the more new business you sell, the greater the surplus strain. I've been trying to explain this to the boards at some companies who are asking why they are losing money if they're doing well on new business. They don't seem to understand that concept. So you have to make it more powerful and say, "What can we do to make this more realistic?"

U.S. GAAP went part of the way and deferred the variable expenses associated with the sale of new business. But that doesn't go all the way. Embedded value really comes down to "gain on sale" accounting. You're projecting the profit from this year's new business at realistic assumptions. So you know immediately if you've generated value or destroyed capital.

Let's compare the three methods on a profit signature basis. With statutory, you have a large initial surplus strain. With GAAP, depending on your assumptions, you may have a small profit or you may have a small loss, in the first year but most profit is deferred. If experience turns for the worse, it is up to the company to determine when and how they are going to "true-up" their GAAP results to reflect this experience. As we've all seen the last couple of calendar quarters, some companies have taken big earnings hits. With embedded value, most of your value is shown at the point of sale.

I don't see any value shown separately for new business under U.S. GAAP. In terms of the variance of assumptions, if there are assumptions that differ from what you've been pricing or expecting, embedded value fully recognizes that impact in the year in question. But with U.S. GAAP, it is usually spread over the remaining life of the policy. In general, if you work for a multinational, embedded value is really the only sensible way to compare performance across regions.

MR. KENNETH A. LASORELLA: As Hubert already pointed out, the focus of statutory accounting is really insolvency protection of policyholders. Statutory accounting involves a lot of conservatism, and you typically will see new business strain with most products. So U.S. GAAP comes in and says, "Okay, let's correct this. We don't want to tell investors we had a great year; but we lost $40 million, statutorily. You know we had a lot of sales; it doesn't make sense." So U.S. GAAP basically is going to unwind the conservatism, the ultra conservatism, inherent in statutory accounting and produce realistic income statements. Typically there is little or no new business strain under U.S. GAAP.

Under U.S. GAAP philosophy, the emphasis is on earnings and comparability of results between companies. I want to elaborate just briefly on the matching of revenue and expenses. Let's assume a manufacturing company will purchase a machine for $100. They will pay cash, so cash will go down by $100. The value of assets (the machine) will go up by $100, and there's no income statement impact.

The analogy with life insurance is that we're paying something to acquire business. Whether it's a block of business or just one policy, we're paying acquisition costs. So we should be able to say, "Okay, our cash goes down but now we're going to set up an asset called deferred-acquisition costs (DAC)." However, there's quite a subtlety about the no front-ending of profits. In a manufacturing company, we don't want to project the number of widgets that the machine is going to produce, assume that we're going to sell those widgets at a profit, and then count them all as cash flows including the profits, saying "Ah, we paid $100 for the machine, but we're going to set up an asset of $130." U.S. GAAP doesn't do that. Embedded value does, which is supposed to be a plus.

There is growing concern that fair value is more or less a liquidation basis of accounting. But U.S. GAAP doesn't dictate that we should assume that we are going to liquidate anything. We're trying to project an income that we are going to give to the investors. And certainly there's a lot of transparency.

The structure of U.S GAAP is such that there is a hierarchy of rigor and applicability. There are almost 150 statements of financial accounting standards (SFAS). It is true that they are not all operative at once, but all are relevant. All insurance-related standards (SFAS 60, SFAS 91, SFAS 97, SFAS 113 and SFAS 120) remain operative and are the primary standards affecting the actuary's work.

Then there are interpretations of the various accounting standards, which are still considered to be fairly potent. These include accounting research bulletins (ARBs) and position papers of the FASB's Emerging Issues Task Force (EITF). In some cases, the statements of position (SOPs) of the American Institute of Certified Public Accountants (AICPA) are more important than the FASB standards themselves. For example, SFAS 120 heavily references SOP 95-1, which provides greater detail and outlines accounting methodology. Another example is SOP 00-3. So we have to pay particular attention to the SOPs, even though they are lower

down the pyramid of hierarchy. An important EITF for life insurance companies, 92-9, released in 1992, addresses the amortization of the value-of-business-acquired asset (VOBA) and the present value of future U.S. GAAP profits.

In reality, U.S. GAAP does not shy away from fair value. For example, under purchase accounting, there are a lot of fair value concepts being applied, certainly with derivatives and the SFAS 115 valuation of assets. So it is not that U.S. GAAP rejects fair value, it is just not used on a regular ongoing basis.

U.S. analysts today are very comfortable with U.S. GAAP. We see a relatively smooth emergence of earnings. There is consistency and comparability between companies. For example, if one company has a P/E ratio of 12 and another similar company operating in similar markets is considered to be a little riskier, then they would expect to see a lower P/E ratio with the riskier company. So analysts are able to build their own models, make their own projections, look at past earnings history and come up with some good estimates of value. This is one key method used by analysts in setting values for insurance company stocks. In addition, the quality of U.S. GAAP earnings is believed to be very high. So besides thoroughly audited financial statements, there is FASB control and SEC oversight.

Insurance companies rely on actuaries to calculate reserves, other actuarial liabilities and DAC, and to conduct DAC recoverability and loss recognition testing. While this work requires actuarial models and assumptions determined using the proverbial "black box," the U.S. GAAP black box is much, much smaller than the black box needed with embedded value and fair value calculations.

From an analyst's perspective, I believe there is great discomfort with the concepts underlying embedded value and its resultant operating ratios. An awful lot depends on the value of new business. Once you strip off the adjusted net worth, you basically have the value of in-force business, and then that's it for embedded value. I believe you will find that there is often a wide gap between a company's embedded value and its market cap, or market value. That gap is to be filled with the present value of future new business and other intangibles. However, EV does not provide these intangible values directly.

Companies disclosing their embedded value often do provide the value of one year's new business. That has some value, but such value estimate depends on the mix of business sold and the profitability of the business included in the model. It doesn't necessarily represent the future of new business. So to reproduce the excess of market cap over a company's embedded value, you generally will have to apply a fairly large multiple to the value of one year's new business. You will find that if you want to make the calculations, you can actually come up with implied values or implied multiples of new business. So analysts probably don't know what multiple to apply to EV. Even in the U.K., when you look at how companies are trading, there is a lot of inconsistency between companies, a lack of transparency, the need for a big actuarial black box and even an inconsistency in the selection of

an appropriate risk discount rate.

What is the "risk discount rate" supposed to represent? Is it the equity cost of capital? Is it a weighted average cost of capital? Should you even reflect the equity cost of capital? If so, how? The equity risk premium that's recommended in embedded value is generally between three and four percent. There is a disconnect between this rate and the risk-free rate anticipated by fair value, because in today's interest-rate environment, you can assume a risk-free rate of about four percent. Add about 3.5% for an equity risk premium, and you're talking about 7.5% before reflecting debt. If you reflect debt, it might even be lower.

A lot of companies use this approach. However, what company is going to go out there and buy a block of business or another company yielding a 7.5% return? I'm not sure why there is a disconnect, and this could be corrected, but I don't think the embedded value represents the sales price for a block of in-force business.

From a financial analyst's perspective in dealing with fair value, analysts are very uncomfortable with volatility. As a matter of fact, if, under U.S. GAAP, earnings are three cents per share less than what the analysts expected—the analysts' expectations as opposed to a company's best estimate — you'll see a drop in the value of the stock. So I don't know how these same people are going to deal with the volatility of either embedded value (which is a lot more volatile than U.S. GAAP) or fair value.

In addition, there's no active efficient market. The assumptions of the day are all over the place. If you look at some of the fair value computations and some of the presentations that were made, you'd find that they deal with entity-specific versus market assumptions. Should you reflect the company's credit risk or not?

There are a number of issues related to the proposed international accounting standard (IAS) for insurance, like the exclusion of renewal premiums on group insurance. There are a lot of changes that are going to take place and then there is IAS 39, which deals with noninsurance annuities or investment contracts. These contracts are currently valued at amortized cost, but at the same time, down the road, all insurance contracts will have to be valued at fair value. Also, U.S. GAAP isn't concerned about liquidation accounting because we want to project the income for investors basically on a going-concern basis.

An additional concern is that international GAAP didn't stick to its fair value guns. I would have liked it if it were fair value all the way through, but it is not. For lack of a better word, it has been "infected" by U.S. GAAP. The current international fair value model seems to have taken on the worst elements of U.S. GAAP. As an example, for some reason the International Accounting Standards Board (IASB) seems to have plagiarized SFAS 115 concepts. So now you can have available-for-sale assets or you can have a trading portfolio held to maturity, or even "held-to-maturity" liabilities. If they are problematic in U.S. GAAP, then certainly they're

going to be problematic in international GAAP.

Now here's the difference between embedded value and fair value. Assets and liabilities are valued in isolation (separately) under fair value. For example, let's suppose that $1,000 is paid to the insurance company for a five-year GIC, and suppose the credited rate is intended to be consistent with market-credited rates and equals the risk-free rate—five percent. Now the company receives $1,000, and buys a basket of slightly riskier assets—a mix of public bonds, corporate bonds, private placements and even some mortgages. After adjusting for investment expenses and for probability of default, let's suppose the expected yield is 100 basis points above this risk-free rate. Under embedded value, those 100 basis points would be projected and discounted back at a risk discount rate, and there would be some positive value after adjusting for cost of capital.

Under fair value, if you take the $1,000 and buy a basket of assets, how could it be worth anything other than $1,000? However, fair-value-liability determination is probably going to use the risk-free rate. Hence, for a company owning a block of GICs, use of the risk-free rate to discount future liability payments will result in a reserve greater than $1,000 at issue. Of course, you could try to sell the GIC contracts. However, I don't think another company would say, "If you give me enough money I'll take that liability off your hands." So there seems to be an apparent disconnect, and here embedded value is closer to fair value than fair value. Fair value doesn't pay much attention to the value of new business. Embedded value overemphasizes it because of the multiples. There is a linkage, but there hasn't been enough work done to link the two together effectively.

MR. MORRIS W. CHAMBERS: Let me give you a little background. Back in the mid '90s, accountants began to catch on to this fair value idea. But they were thinking about the asset side of the balance sheet. And determining fair value on the asset side is, generally speaking, pretty straightforward. As they got into it, they realized if they were going to fair value the asset side of the balance sheet, they'd better get something consistent on the liability side. And so they decided to fair value the liability. But of course, they had no idea how to do that.

Unfortunately, they began to read and listen to what the financial engineers and the financial economists were saying. Of course, they had been examining assets for a decade, and they were presuming that the fair value of liabilities was essentially a matter of changing the sign on the asset. Then you have the liability value and you put it on the opposite side of the balance sheet. But that won't work. I think the sort of slippage that you've seen in the past 18 months from the accountants arises from the fact that they're beginning to realize that that definition of fair value won't work. So they're grasping at straws to find out what will work. Unfortunately, they are reaching back to passé methodologies like U.S. GAAP, under the influence of the vested interests, by the way, of the American Council of Life Insurers (ACLI) and large reinsurers in Europe who would prefer to find a methodology where they can manipulate income rather than tell the world what's really going on.

The IASB began to look at insurance in July or August of 1997. The IAA, in anticipation of this, had established its insurance accounting committee in April of 1997, prior to the IASB's activity to develop an IAS for insurance. Early in 1998, in preparation for the work that would be involved in assisting the IASB to define a new paradigm for financial reporting for insurance contracts, the leaders of the IAA Committee on International Insurance Accounting drafted a set of principles upon which meaningful financial statements could be constructed. Now while these principles have not been adopted as an official position of the IAA, nonetheless they seem to have been accepted by the members of the IAA's committee. They've proven to be an invaluable reference in the committee's dealings with the IASB. For me, these principles represent the fundamental basis for accounting for insurance contract liabilities. So let's look at them.

The new standard's intent is to define meaningful financial statements for insurance contracts, not for insurance companies. First of all, for actuarial liabilities of a given insurance-contract type, a single accounting model should apply for all jurisdictions. The model should provide demonstrated continuity between the insurance and noninsurance products, which differ from each other by the addition or subtraction of specific product features. When I say jurisdictions in that context, I'm referring to the sectors of the financial services industry, not to political or regulatory jurisdictions.

Fair value of liabilities for insurance contracts should be the goal of an accounting system that uses fair value of assets. Note this is a conditional statement; it does not espouse fair value of liabilities if assets are not held at fair values. Some of the latest stuff that you've seen coming out of the IASB, of course, does not espouse fair value for all of the assets, particularly in phase one.

Third, where a reliable market-based assessment is not available, a fair value liability should be calculated using present value techniques on a fully prospective basis. In the valuation of these prospective liabilities, expected value assumptions should be made for all material contingencies. These expected values should be based, if possible, on relevant credible company-specific experience. They need not reflect the actual assets held to support the liabilities if those assets are held at fair values, except when the amount of the benefits to be paid depends on the assets that are backing the liabilities. An acceptable approach would reflect the most appropriate set of assets to provide for the liabilities; we call that the replicating portfolio.

In the marketplace, fair value liabilities can be observed to exceed expected value liabilities by a market value margin, sometimes referred to as a provision for adverse deviation, which reflects estimates of the prices agreeable to two willing parties for transferring the liabilities. The market value margin reflects the market perception of the risk being undertaken. The market for insurance liabilities is not currently a deep, liquid market, in which fair value liabilities can be quantified with

precision. Therefore, it is appropriate to evaluate expected value liabilities and market value margins using stochastic methods or the study of appropriate alternative scenarios. The use of a relatively narrow range of provisions for adverse deviation applied to the expected value assumptions is also a reasonably workable proxy, which may be used to produce appropriate liabilities consistent with market observations in an accounting system based on fair value of assets.

The expected value of liabilities and market value margins should not be locked in, but should be redetermined at each valuation date, or at least reconfirmed at each valuation date on the basis of the most credible and relevant current information. Since by the inclusion of market value margins the values of the expected cash flows incorporate risk, the discount rate can be set at the investment return on the investment portfolio that would most closely match the liability cash flows. That is the replicating portfolio. This portfolio essentially matches the assets and liabilities in such a way that changes in the market prices, i.e., interest rates, affect the changes in market values of assets and liabilities as consistently as possible. This satisfies the goal of consistency in the valuation of assets and liabilities. The expected values in the market value margins of future cash flows and the replicating portfolio should be developed by the insurance specialist, normally a professionally qualified actuary, certainly not an accountant.

Financial statements should be presented in such a way to be more transparent to their users. Disclosures should include things such as the effect of industry-derived expected values, which differ from companies' specific expected values, and the effect of regulatory or general-purpose restrictions on the distribution of surplus to shareholders. Distribution of surplus to policyholders, of course, would be part of the liabilities.

Finally, financial reporting for insurance contracts would be more meaningful if it incorporated and disclosed an appropriate level of RBC. It would be more efficient for preparers and less confusing to users if regulatory reporting and general purpose accounting could be harmonized through the adoption of consistent measures of actuarial provisions in a common, robust, RBC procedure and analysis.

Building on these principles, I advocate a liability valuation regime that incorporates the following features. It addresses the issue from an exit-value rather than from an entry-value approach, which I maintain does not imply a liquidation. It uses an exclusively prospective methodology—present value of future cash flows. That means that the concept of a profit at issue is totally meaningless and is not something that you need to look at all. You're looking forward, not back.

Next, the cash flows are determined using entity-specific assumptions, those that represent the activities of the company—the underwriting standards, the claim procedures, et cetera, et cetera. The present value methodology is consistent with the valuation methodology of the assets. In other words, if the assets are held at fair value, then the liability should be. But the fair value of liabilities has to be very

carefully defined.

Expected value assumptions for the cash flows are adjusted by market value margins to reflect the market's appetite for the risks involved. Here, I would say that the financial economists have it really wrong, and that's the problem with embedded value. As Hubert has suggested, the risks associated with an insurance contract can be reduced to a margin and the interest rate. That can't be done for things like the margin associated with persistency or the margin associated with mortality, because those things vary by duration or by attained age. You would have to calculate a different interest rate and a different interest-rate adjustment for every duration into the future for each group of policies. Even with modern computing technology, and particularly in view of the fact that you may well be using stochastic processes, it is just going to consume all of your energy.

All cash flows for the period during which the policy is expected to remain in force should be included. Certainly no minimum liability floor should be imposed, which is also a contradiction of the idea of prospective valuation. If the company is a going concern, under absolutely no circumstances should credit risk be reflected in the liability. In my view, this is fair value, though it's not fair value as defined by the IASB and FASB. They would call it entity-specific value, but I would say that it's synonymous with real fair value. I'd say that in defining fair values for liabilities FASB and IASB are misguided, and I hope they soon will see the light.

What are the disadvantages of this method? It has drawbacks, especially for companies that are organized to contend with only the current financial reporting regime in the United States. First, the method has the potential to produce relatively volatile income statement results, particularly in comparison with current U.S. GAAP. Of course, current U.S. GAAP has essentially been constructed to produce smooth financial results. Second, moving to such an approach involves the expense of building elaborate new valuation and tracking assumptions at least for some companies. Some companies already have them. Third, it represents an entirely new paradigm, so it will involve a degree of re-education of analysts and other users of insurance financial statements. Finally, it's been described by some, including the ACLI and a few large European multinationals, as an "untested" method.

What are the advantages? In my view, the disadvantages, to the extent that they may be real, are greatly overshadowed by the advantages. Among those are that financial statements are more meaningful, logical and understandable. The methodology parallels the internal reporting and analysis already undertaken by well-managed companies. Much improved and vastly more useful management information is an easy by-product, including the by-product of embedded value.

The problem with embedded value is it goes at the issue of valuing your liability backwards. Liabilities, under the embedded value approach to this issue of financial reporting, are sort of the afterthought; after you take out everything else, what you

have left on that side of the balance sheet is liabilities. If you want to really do embedded value correctly and get a meaningful number, you have to value the liabilities first. If you're going to do that anyway, why not use that number in your financial statement and then go on to get your embedded value?

In good asset/liability management, discipline is promoted. The potential for income statement volatility, which was cited as a disadvantage, can be greatly reduced by undertaking a robust asset/liability matching regime. Finally, contrary to the arguments of the naysayers, the method has been tested in the late 1980s in Canada. That testing lead to its adoption in Canada in 1992 for both life and property casualty companies, and it's been operating there successfully ever since.

MR. KUNESH: Thank you gentlemen. You've all described and presented very strong cases for each of your methodologies

MR. BILL CAPLAN: I'm with William C. Caplan Consulting. I ran into embedded value on a case about three or four years ago, which was the first time I had seen it. In fact, I just learned today that it's really used as a comparison between companies, which shocked me because I think there's so much variation in it, from an assumption standpoint. The concept makes a great deal of sense. But the situation that I ran into involved mortality assumptions. There had been a spike in mortality the year before, and the actuaries who came in and did the embedded value put a great deal of credence in that spike and projected it into the future. The next year they came along and looked at it, and the spike was not quite as bad, so they dropped it down. The year after that there was a little change; they brought it back up.

When you compare from year to year as they did, there's a dramatic impact, because they were taking not only the last year's business that was written, but prior years' business as well. It made some really volatile swings in terms of the value of the business. I found it very hard to interpret the real value of this business. Today we find out that it's compared between companies. If you're out there trying to compare companies, how would you ever have a sense of what the underlying assumptions were and whether they were valid? And how much volatility would there be as a result of the change in assumptions?

MR. MUELLER: Your first point was that embedded values are used to compare companies. That is in fact correct for companies that publish embedded values. So you do see a fair number, especially multinationals, listing embedded values on a regional basis or at least on a combined basis, and also showing the value of this year's new business. So it is used as a comparison, but it's really more of a secondary impact. The companies that publish embedded values primarily do it because they want to manage their business on a consistent basis. It's a performance-measurement tool, especially if they work in different regions, in different territories and with different companies.

Regarding the second point on mortality, the issue is about the assumption. Normally you would not change your assumptions into the future because of a one-year change, unless it is a change in the company's experience that you expect to persist. Typically, with mortality or lapse assumptions, you would look at not just the history of one year, but two or three years. If you had two years of relatively stable mortality and one year with a spike in mortality, you wouldn't really give that last year full credence and project that forward forever. But maybe you'd look at a three-year average and move it up or even keep it constant, taking that as a one-year variation and observing what happens the next year.

Now if it happens again the next year, it becomes a lot more credible. Ultimately you want to go back and ask if this is a permanent change in regime or did you miss in your underwriting. We have seen this happen with XXX. We saw a spike in mortality in the industry, because a lot of business was pushed through just pre-XXX in 1999. So we have seen a slack in underwriting, but the industry mortality hasn't gone up. But too many risks maybe were classified as a preferred nonsmoker, which should be a standard nonsmoker, or otherwise were misjudged when underwriting the application, and that led to increases in actual risks expected. If you see that happening, it's kind of like duration three or duration four right now; you can project that forward in that cohort. But that doesn't mean your ultimate underlying mortality has to be projected at the same level. So you need actuarial judgment. If it's done right, you wouldn't revise the assumption after the first year, except maybe for the specific block of business that caused that spike. Does that answer your question?

MR. CAPLAN: Yes, but to follow up, how do you guard against the volatility that would come through from making that shift in assumption?

MR. MUELLER: You can't totally guard against it. In fact, I would say if you looked at U.S. GAAP, a lot of companies that publish U.S. GAAP results did true-up their DAC assets at the end of last year, because they were projecting 13 and 14% equity-normalized returns. At that point, everybody knows it's not a conservative or prudent assumption anymore. So you have those one-time hits, depending how volatile the market is, in any methodology. I think if you're trying to totally smooth that out, you're just going to do what U.S. GAAP does as a methodology, which is to spread out the impact over the future. But if your audience looks at your results, they want to know how much of your performance really is due to management actions, and how much will continue in the future. So the focus is not necessarily to avoid volatility, but to really show the performance of the company. The performance of both U. S. and European companies has been volatile, because they all are susceptible to market swings.

MR. CHAMBERS: I'm sure that others in the audience are saying that Bill's criticism of this adjustment to experience swings can be applied to fair value as well. I would agree, if you're going to respond to every little glitch. Of course, the reality is that the actuary would not change the assumptions like that. The actuary

would adjust assumptions when he or she had a clear indication that the environment has changed.

With respect to comparability, when talking about fair value or embedded value, we say this is to make comparability of companies more reasonable. And it does make them more reasonable. But in my view, the accountants and the financial analysts don't know what they're looking for when it comes to comparability. There are those out there who think that, in order to get comparable results, everybody should use the same mortality rate. But that's not going to give you comparable results; it's a very simplistic way of looking at it. The real answer is you use assumptions that are appropriate to the circumstances of the company, and then you can compare companies.

FRANCIS DE REGNACOURT: I'm not speaking as an ING person. I'll comment as chairman of the Insurance Task Force of the Association of Insurance Management, which used to be called the Institute of CFAs. We think we represent most of the users of insurance accounting. You might say that none of these methods are right, because there's no single answer. We spend a lot of time wrestling with insurance accounting, which, after how energy companies account for oil exploration, may be the most unstable accounting regime there is, for the good reason that insurance liabilities are all about guesses as to what happens in the future. So the answer may be one thing if the markets rise this year but quite a different thing if the markets go back down or stay where they now are.

So what do you want as users of accounting? You want comparability. Analysts are comfortable with U.S. GAAP. They are, not because they think it's a good system, but because they understand it, and after 15 years of using U.S. GAAP, they've learned to back out what they don't like. They're still being thrown for a loop with the DAC true-ups, which we might have called "true-downs." The problem with comparability isn't so much the actual DAC, but the timing used by companies to actually true-up DAC. Company A did it in 2002, but Company B will get around to it by force in 2004, and you're trying to compare results between periods.

Analysts like embedded value, because it gives a good analysis of what happens when change takes place. They dislike embedded value for its heavy reliance on assumptions, the inadequate level of disclosures currently being made by companies and the lack of qualified actuarial personnel to sort out all the differences. A lot of analysts, believe it or not, like statutory accounting. Now we all know that's lousy accounting as accounting goes, but it's given that analysts never believe the answer anyway. What they like about statutory accounting is that everyone does things the same way. And at least you can stack companies up one against the other, see how they've done against the reserves and who got the mortality gains and mortality losses. You'll never understand every single company you follow, but if you understand a couple of them, then you can line up the others comparatively with each other. That's about as good as you'll ever get. So I don't know which method could be declared the best, because there's always going to be

an analyst who says, "It's still going to be wrong."

MR. LASORELLA: I like your initial comment about comparability and, in particular, the issue of these being guesses and your comparison with the oil industry. That's right on. To presume that an actuary's determination of the liabilities of the company is the one right answer is just ludicrous. But unfortunately people interpret it that way. I've heard suggestions that I think hold a lot of promise; that is, the actuary should provide a range of answers. Certainly the actuary should be doing this for his management: provide a range of answers and identify what perhaps is most probable, maybe the mean of the answers. But it would certainly be more meaningful to point out that all of this is still educated guess work.

I'd like to combine Francis' and Bill's comments, because they both seem to deal with volatility. I'd like to make a prediction here that U.S. GAAP is just off the mark. Let's suppose it's 12:01 on the clock, U.S. GAAP is the required basis of accounting and it is rigorous, but unsophisticated. Now you move 180 degrees from there and you're at 12:30, and you are now subject to either embedded value or fair value accounting, where there's a whole lot of volatility. My prediction is that you'll have to analyze why the earnings are what they are. Let's suppose they were predicted to be $20 million, and they end up being negative $60 million. It will be explained that the $80 million difference will be $60 million due to changes in equity markets, something due to interest rate movement, something due to inflation and something due to foreign currency exchange rates. Eventually you'll end up with an estimate of normalized earnings of about $19 million. So by unwinding, by building the sophistication and explaining the differences, you'll be at about 11:59. If you look at that, 11:59 isn't all that far away from 12:01 if you measure the distance. You'll be pretty much back to the U.S. GAAP value. You could do all that, or you could just start with U.S. GAAP and stick with U.S. GAAP.

MR. MUELLER: It's interesting that this comes from somebody who works in the United States for a Canadian company. Canadian companies, in addition to their own GAAP and in addition to embedded value, which they have been reporting, are now also reporting the source of earnings analysis to the analysts and in the statutory financials. If you look at the source of earnings analysis components, you'll see exactly the kind of elements that I showed you earlier, which explained why the value from the in-force moved from A to B over the year. Those are exactly the same components.

MR. CHAMBERS: I suggest that in the future when you have volatility in the income statement, you're not going to see it described in the way that Ken has, but rather that you had a jump or a drop of earnings of X million dollars because you've been taking risks on your assets. You did not match your cash flows, you did it on purpose, and you either lost the bet or you won the bet. That's where the real volatility is: where you're not matching your cash flows between your assets and liabilities. There's going to be a consequence for that.

MR. ARNOLD A. DICKE: I might be one of the few people here who's been involved in actually using all these systems. I think the most important thing, from a more global perspective, is to say to ourselves most of us work for the life insurance industry. If the life insurance industry's accounting doesn't portray it accurately, then we're not likely to get proper attention from investors in order to flow capital into our sector. A lot of our business has to do with the far future.

One of the things I'd like the three panelists to comment on is the way some of these things might play out in their accounting systems. For example, if a company has been writing a large book of mortality risks, and some things begin happening with genetic medicine or personalized medicine and we're able to cure certain forms of cancer and so forth. Which of these systems will help the world understand the impact that how all this mortality risk accumulated over the years will have on income and company value? Looking forward to these events, how are your accounting systems going to help the investment community put the right value on our industry and add capital to it, if it's appropriate to do that?

MR. CHAMBERS: If we take the particular example that you chose, a paradigm shift in mortality expectations or improvement in mortality, with respect to U.S. GAAP, I think the consequence for the payout annuity business would be a big loss. You'd have an immediate loss that would have to be shown. On the other hand, with respect to the insurance business, using U.S. GAAP would mean that there wouldn't be any immediate effect; there would be gradual reflection over the years. With respect to both embedded value and fair value, though to different degrees for each, the consequence would be an immediate front ending of the financial consequence of the change. Presumably, on annuity business, it would be an immediate loss, basically the present value of the future expected losses in future years, but adjusted by a provision for risk. Essentially, the market isn't going to believe you completely and they're going to hedge the bets. The same would be true with respect to the insurance side: There would be an immediate profit recognition, adjusted for risk.

MR. MUELLER: To clarify, when you say insurance business do you mean life insurance?

MR. DICKE: Yes.

MR. MUELLER: And when you say annuities, you mean to pay out annuities?

MR. DICKE: That's right.

MR. MUELLER: I would agree with what Mo is saying. I think you do show that impact, and to the extent there are significant improvements in mortality, I think that needs to be reflected. If we make genetic advances, it doesn't make sense to project historic mortality ratios forward. The new trends would need to be reflected. To the extent that you have sold business in the past, at premiums that do not

recognize such trends and cannot be changed, there will be an impact on your earnings.

MR. CHAMBERS: One qualification may be in order. Presumably if it's participating business, you're going to give some of that back to the policyholder. So that means you're not going to have that much of a change. I think the other aspect is that you're not going to immediately believe that all of the expectations of a future utopia are going to come to pass. So, as I said, you'd be hedging the bets.

MR. LA SORELLA: With respect to U.S. GAAP, it's already been pointed out there's a smooth gradual emergence of earnings. So you would see a lower amortization percentage used if it were SFAS 97 products or SFAS 120. So a lower percentage of the revenue stream, which would be the gross profit stream, would be needed to amortize DAC. You would see some higher profits, but they would be smooth and gradual. It's possible on the annuity side that an immediate loss will have to be taken. There's a little bit of imbalance, so the tendency is to err on the conservative side.

However, there would be no front ending of these profits upon the expectation of the mortality improvements. That's what is bad about U.S. GAAP. Whereas, in embedded value and fair value, it's very good to tell the investors what the situation is like, in other words what it's going to be like five, 10, 15, 35 years into the future. Front-end those profits now; let them know what the right number is. Even under U.S. GAAP, some of the most reputable companies have found ways to front-end profits.

MR. JESSE M. SCHWARTZ: I'm from Watson Wyatt. The analysts that I've talked to tell me that they would love embedded value. But they're not going to go out and hire 50 actuaries to help them figure out the embedded value numbers given to them, unless they have more professional accountability and standardization on how the assumptions are developed. In the final analysis, they have to depend on us for this comparability in determining value.

Another thing, we are in a long-term business. To the extent the actuary has developed systemic assumptions, it's been their best guess as to what experience is going to be if there are small systemic changes. You have to adjust it, and there's going to be volatility. The fact that the market now doesn't understand how to cope with that volatility is just a fact of life—GAAP has artificially inhibited their ability to determine what the value is of the company.

Lastly, there are two complaints I've heard about embedded value. Number one: especially in the current environment, it's not stochastically developed. It's deterministic, except maybe for product features like GMDBs or GMIBs. As a result, you don't really get the value on a consistent basis in different environments; because you really can't adjust the value properly. So I'd like to ask where we're going with stochastic applications, not just on GMDBs and similar product features.

The other criticism that I heard is that, from the point of view of the company, does the target surplus used by the company have any meaning in relation to risk? After all, as a company you try to determine or allocate risk capital based on the underlying risk that you've assumed. Then you adjust it to the extent the rating agencies or the regulators force you to, based on their empirical formulas. So where are we going as far as creating an embedded value basis for companies to be able to reflect the true risk of their business?

MR. MUELLER: The first question was: How does embedded value deal with the fact that it's not stochastic? We all know U.S. GAAP is not stochastic either; it's very deterministic. Embedded values do include costs for options and guarantees calculated on a stochastic basis. I think right now it's the limitations on the company side that prevent you from doing a full stochastic embedded value model. If you're running a thousand scenarios on your overall business, I think it would overextend the capabilities of the computers for 99% of U.S. life companies.

However, there are methodologies in place and being developed that, instead of running 1,000 scenarios, allow you to pick out 50 or 100, which will give you the same characteristics of results. We have done this in some cases, and that becomes more palatable than to do stochastic embedded values. But I think the industry overall is not at a stage right now where stochastic modeling is developed well enough across the board for companies to do this. I think we need to move to that over the next year or two. Regarding target surplus, you have C-3 Phase Two; you have the new GAAP SO; you have NAIC Actuarial Guideline 39; and you have all these guidelines where you need to do stochastic work. Once companies are in a position to do stochastic analysis, I think they can also do embedded values stochastically.

I'm glad you asked the question on capital, because I lead a sub-group of the Society that deals with economic capital. I fully agree with you that it would be better for companies to use capital, which is reflective of their risks, rather than to use industry formulas. But there are only a few companies that are at that level. However, the industry is moving to that. So to the extent that you can do the required capital calculation based on your risks, that would enhance the methodology. I'm aware of at least one or two companies that can do that, and the industry needs to move in that direction. In fact, even rating agencies and regulators are encouraging that now. But I think we're still a year or two or three away from being able to reflect risk in required capital determinations.

MR. CHAMBERS: I would endorse that. We're seeing that coming out of the International Association of Insurance Supervisors (IAIS) through the influence of the Bank for International Settlements (BIS) with its phase 2 capital. They're looking for banks to determine their own required capital, based on capital stochastic models that have been vetted of course, by the regulators. But once they've been vetted and periodically checked, the banks can determine their own required capital using those models, rather than, for instance, the RBC formulas.

The IAIS is moving in the same direction, sort of the three pillars of management of capital depending on the sophistication of the company.

MR. SCHWARTZ: I think the biggest issue is not knowing how long the current interest-rate environment is going to proceed. In our M&A practice, you need to figure out if a company is an acquirer or an investor. How do you figure out the true value of a company in this interest-rate environment, not just for interest-sensitive liabilities, but also for the more traditional non-par liabilities? How do you get information to figure out what you could expect the value to be in the future, especially since we're dealing with long-term liabilities?

UNIDENTIFIED SPEAKER: I think the changing of assumptions is really kind of a non-issue, because you could actually redefine U.S. GAAP to unlock all the time if you wanted to, or you could have more frequent loss recognition for smaller blocks. If that were allowed, you'd get a lot closer on that issue. For the other ones, you can put in degrees of locking if you like, and you can smooth them out if you really want to do so. So I think that's not a big issue.

I've compared embedded value with fair value, attempting to do so with what my company calls risk-adjusted return on capital, which includes a change in the fair value of assets and liabilities in the numerator and economic capital in the denominator. I've been happy with the economic capital calculations we've been able to do, except the part where you try to diversify risk. You try to get the implications of risk diversification. If you have risks that are not correlated, then you have to figure out how much reduction to give for that. There's no really good way to go about doing that. For example, if you have mortality risk, it's totally uncorrelated with other risks, such as stock market-type risk. It's very hard to determine.

But the really hard part about fair value accounting relates to the market value margins. I would argue it's not just a provision for adverse deviation because once you have the market value of assets for the balance sheet, the other side really has to replicate the market. However, there is no market with insurance liabilities except perhaps in the reinsurance market. We tried to use the reinsurance market to estimate those things. It is very difficult to do, and it doesn't come out at all like you think it should. It is nowhere near the usual margins that actuaries put in, at least if our calculations were all correct. So there's a lot of difficulty and that adds a level of uncertainty in how the results would come out under fair value.

MR. CHAMBERS: I would take issue with one statement you made. You said there really isn't a market for insurance liabilities. That's true in the States. I think it's less true elsewhere. Lots of businesses do move between insurers in other parts of the world. Now there's certainly not a deep liquid market. But there might be on the order of 75 transactions a year around the world. You can get some indication from that.

UNIDENTIFIED SPEAKER: I said except for reinsurance markets, and you're absolutely right. The problem is most companies don't have access to that information.

MR. KUNESH: The panelists have asked that I poll the audience on who favors embedded value by show of hands? Who favors U.S. GAAP? And who favors fair value? The approximate results: Embedded value wins; fair value second; GAAP is third. Thank you very much for participating. And thank you to the panel.

Chart 1

The embedded value (EV) is a component of the market (enterprise) value of a life insurance company

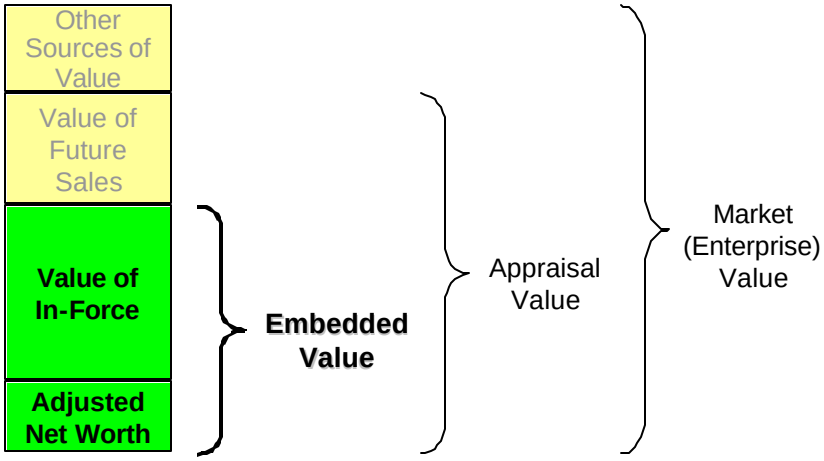

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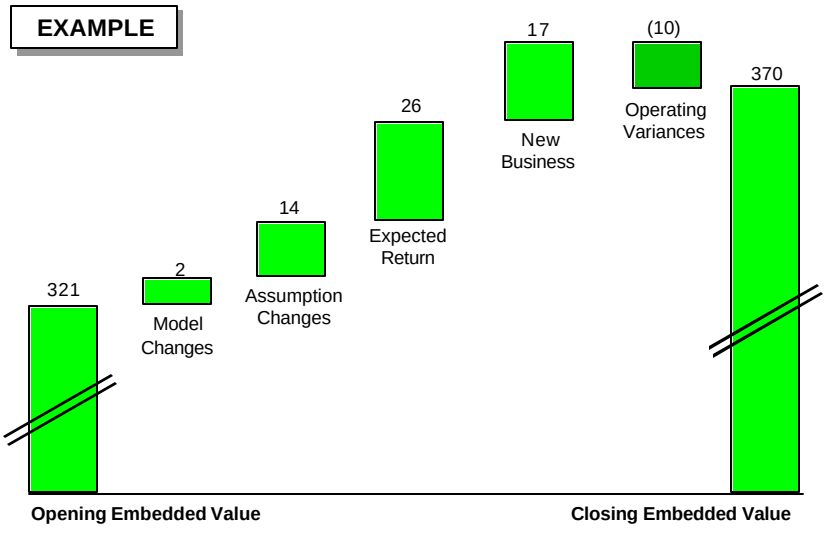
Chart 2

An analysis of embedded value earnings reveals the underlying drivers of value



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