



ASSOCIATION ACTUARIELLE INTERNATIONALE
INTERNATIONAL ACTUARIAL ASSOCIATION

June 3, 2003

Sir David Tweedie
Chair
International Accounting Standards Board
30 Cannon Street, London EC4M 6XH,
United Kingdom

Re: Insurance Contracts Project

Dear Sir David:

The accompanying report is submitted on behalf of the American Council of Life Insurers (ACLI) and the International Actuarial Association (IAA). This Joint Research Project evaluates and discusses two significant issues for the Board's consideration.

- 1. Inconsistent measurement of assets and liabilities will, in many cases, produce "financial noise" that can misrepresent business reality.**
- 2. An accounting model that establishes artificial constraints (e.g., requiring the measurement of the liability using a risk free discount rate) can lead, in many cases, to unrepresentative results.**

While the report makes no formal recommendations, alternatives are presented that the Board may wish to discuss during its deliberations on this project. Because of the significance and complexity of these issues, we are pleased to be able to participate in an educational session with those interested Board members and IASB staff about the details underlying the results shown in this report.

We look forward to the opportunity to meet with you to discuss this report and the impact of the various measurement techniques has on the financial reporting of insurance contracts.

American Council of Life Insurers

International Actuarial Association

Cc: P. Clark
W. Upton



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**Second Report on the American Council of Life
Insurers (ACLI) / International Actuarial Association
(IAA) Joint Research Project Concerning the Potential
Interaction of Methods of Asset Measurement under IAS
32 / 39 with Various Liability Measurement Methods and
the Effect of this Interaction on the Financial Statements
of Life Insurers**

June 3, 2003



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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION	2
PURPOSES OF THE JOINT RESEARCH PROJECT.....	3
BACKGROUND.....	5
FINDINGS	10
A. IMPACT ON EARNINGS WHEN ASSETS USED BY AN INSURER TO BACK THE ANNUITY LIABILITY HAVE EXPECTED CASH FLOWS WITH CHARACTERISTICS THAT <i>EXACTLY</i> MATCH THE EXPECTED CASH FLOWS FROM THE ANNUITY (PLUS MARKET VALUE MARGINS CALIBRATED TO PRODUCE A ZERO PROFIT AT ISSUE) WHEN ACTUAL EXPERIENCE EMERGES AS PRICED.....	10
B. IMPACT ON EARNINGS WHEN ASSETS USED BY THE INSURER TO BACK THE LIABILITIES HAVE EXPECTED CASH FLOWS WITH CHARACTERISTICS THAT CLOSELY MATCH THE EXPECTED CASH FLOWS FROM THE LIABILITIES AND ACTUAL EXPERIENCE <i>DOES NOT</i> EMERGE AS PRICED FOR.....	18
C. IMPACT ON EARNINGS WHEN ASSETS USED BY THE INSURER TO BACK THE LIABILITIES HAVE EXPECTED CASH FLOWS WITH CHARACTERISTICS THAT <i>DO NOT</i> CLOSELY MATCH THE EXPECTED CASH FLOWS FROM THE LIABILITIES	19
D. BALANCE SHEET IMPACT AND CONSIDERATIONS	21
E. IMPACT ON EARNINGS WHEN ASSETS USED BY THE INSURER TO BACK THE LIABILITIES HAVE EXPECTED CASH FLOWS WITH CHARACTERISTICS THAT CLOSELY MATCH THE EXPECTED CASH FLOWS FROM THE LIABILITIES AND ACTUAL EXPERIENCE EMERGES AS PRICED FOR	22
F. IMPACT ON EARNINGS WHEN ASSETS USED BY THE INSURER TO BACK THE LIABILITIES HAVE EXPECTED CASH FLOWS WITH CHARACTERISTICS THAT <i>DO NOT</i> CLOSELY MATCH THE EXPECTED CASH FLOWS FROM THE LIABILITIES	30
G. IMPLICATIONS FOR INVESTMENT CONTRACTS.....	35
H. IMPACT ON THE FINANCIAL CONDITION OF THE ENTITY WHEN ARTIFICIAL CONSTRAINTS ARE IMPOSED ON THE MEASUREMENT OF INSURANCE CONTRACTS	37
APPENDIX 1	40
A. ASSET INVESTMENT AND YIELD ASSUMPTIONS	41
B. LIABILITY VALUATION ASSUMPTIONS	42
APPENDIX 2	45
YIELD RATES	45
APPENDIX 3	49



ASSOCIATION ACTUARIELLE INTERNATIONALE
INTERNATIONAL ACTUARIAL ASSOCIATION

LIST OF PARTICIPANTS	49
APPENDIX 4	50
ASSETS, LIABILITIES & SURPLUS	51
INCOME STATEMENT DATA	53

Executive Summary

The ACLI and the IAA believe that financial statements should provide useful financial information. **When assets and liabilities are not measured on consistent bases, the result produces “financial noise”, making it difficult to understand the financial condition of an entity.** This report shows the effect on earnings of consistent and inconsistent bases of asset and liability measurement under scenarios with both matched and unmatched assets and liabilities.

This Joint Research Project (project) demonstrates the financial reporting implications of a volatile economic environment, such as experienced in the US since 1970, of an insurance and a long-duration investment contract. Even when actual experience emerges as expected when the contract was priced, if assets and liabilities are *not* measured consistently, the earnings of a life insurer will not reflect the contract’s underlying business reality. In many cases the value of assets and corresponding liabilities move in the opposite direction. Even informed users may not be able to discern the performance of the company from reading such financial reports.

The current exposure draft of the amendments to IAS 32/39 proposes that financial liabilities are to be designated using either of two measurement bases (amortized cost or fair value). Nevertheless, the IASB has tentatively decided that the liability associated with insurance contracts must have a single valuation basis, tentatively identified as “fair value”. Given our findings concerning the need for consistent measurement of asset and liability bases as a prerequisite for earnings to provide useful financial information regarding insurance contracts and as long as alternative asset valuation bases are allowed, the IASB should consider making an alternative liability measurement basis available for insurance contracts. One approach that could serve as an alternative measurement base under Phase 1 and Phase 2 is the Held-to-Maturity (HTM) basis illustrated in this report.

A second significant finding is the financial impact on earnings when the measurement basis established includes constraints inconsistent with economic reality. **An accounting model requiring the measurement of a liability using risk free discount rates can create significant reported losses at issue for business otherwise expected to be profitable.**



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Introduction

This report provides the findings of a project of the ACLI and the IAA regarding the effects of the measurement of both an insurance contract exempt from IAS 32, *Financial Instruments: Disclosure and Presentation*, and IAS 39, *Financial Instruments: Recognition and Measurement* (IAS 32/39) and an investment contract subject to IAS 32/39 in conjunction with the measurement of financial assets under IAS 32/39.

The ACLI is the principal trade association of life insurance companies in the US, and its 383 members represent, in the aggregate, 73 percent of the assets of all domestic life insurers in the US.

The IAA represents the international actuarial profession. Its forty-seven full member actuarial associations represent more than 95% of all actuaries practicing around the world. The IAA promotes high standards of actuarial professionalism across the globe and serves as the voice of the actuarial profession when dealing with other international bodies on matters falling within or likely to have an impact upon the areas of expertise of actuaries.

This project was conducted by one of the members of the Actuarial Standards Subcommittee of the International Actuarial Association. It was reviewed by the Chairman of the IAA's Committee on Insurance Accounting and by the two co-Chairmen of the Actuarial Standards Subcommittee of the IAA. The Chairman of the ACLI Accounting Committee, along with a small group of American actuaries and accountants designated by the ACLI, also reviewed the report. A list of participants is contained in Appendix 3.

Before publication, the research was also made available to all members of the drafting group of the Actuarial Standards Subcommittee of the IAA. Although this was reviewed by certain members of the IAA active in its consideration of IASB insurance accounting and related actuarial standards issues, this review does not constitute the necessary due process for this report to be considered a public statement of the IAA. A public statement can only be made after a due process involving a formal vote of the members of the IAA. Therefore, all statements in this report concerning any opinions of the IAA should be read only as the opinions of those members of the IAA committee who have participated in preparing this report.

As of the date of publication, this report had also not completed the process required for it to be considered an official public statement of the ACLI.

Purposes of the Joint Research Project

The IASB Insurance Contracts Project is important to the insurance industry. A thorough analysis and understanding of its implications requires that the interaction and the measurement of insurance contracts exempt from IAS 32/39 and of investment contracts subject to IAS 32/39 be examined. Such rigorous examination is critical to the ultimate success of the IASB Project. Both the diversity of current national standards for insurance that will be used in Phase 1 and the objective of the IASB to adopt a single standard for all insurance contracts in Phase 2 make this an important endeavor.

The specific purposes of this project include the following:

- To improve the understanding of the effects of the measurement criteria for insurance contracts under:
 1. Current IASB proposals for Phase 1 disclosure based on fair value (FV) concepts.
 2. Current IASB proposals for Phase 2 insurance provision calculation based on FV concepts.
 3. Alternative ACLI proposals for both Phase 1 enhanced insurance provision measurement concepts and alternative Phase 2 provision calculation based on a HTM approach until such time as all assets are required to be measured using FV concepts.
 4. Current national GAAP for insurers, using US GAAP as an example. Note that a significant difference between HTM and US GAAP for the products reviewed involves a difference in the discount and risk adjustment methodologies applied. For example, HTM is based on the initial set of risk-free rates, while US GAAP for SFAS 60 products uses an expected set of earned interest rates plus a provision for adverse deviation. Other differences are noted in Appendix 1.

It is important to note that most references in this report other than in Section H to fair values [for (1) and (2)] reflect the possible use of a negative market value margin (see Appendix 1 for a description of this approach).

- To identify potential earnings measurement issues.
- To illustrate the interaction of the measurement of both insurance liabilities and investment contracts issued by insurers with financial assets measured under IAS 32/39.



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- To provide an educational tool for both the IASB and the insurance industry to better understand the practical issues that need to be addressed.

Background

Contracts and Timeframe

The two contracts selected for study in this project were felt to provide a good test of the ability of any proposed accounting system to produce earnings that reasonably reflected the characteristics of various accounting models. Other factors might be significant for other insurance products, e.g., universal life and variable/unit-linked contracts.

- An insurance contract – a single premium life-contingent immediate annuity issued to a male aged 65. This contract was selected because its financial performance is dependent on only two main variables (mortality rates and investment returns), with insurer expenses having a relatively minor effect. It is an important contract in most countries in the world in which there are life insurers. Other than the guaranteed lifetime annuity payments purchased by a given single premium, there are no embedded guarantees, options or derivatives included. It illustrates both the importance of consistent measurement of assets and liabilities and the characteristics a liability measurement method must contain to result in reported income that reflects insurance business reality.
- An investment contract – A single premium 20-year annuity certain. This contract was selected because it is a long duration contract and because its financial performance is dependent on only one variable (investment returns), with insurer expenses again being relatively minor.

Actuaries at the ACLI and IAA have priced the life annuity contract that pays an annual income of \$10,000 for life sold to a male-aged 65 as of December 31, 1970 in the US. In pricing this product, the actuaries reflected current industry practices concerning expected mortality, expenses, commissions, and the pricing interest rate used in the premium calculation based on then current interest rates. The investment contract was priced in a similar manner.

The one area that was changed in the premium calculations is the use of a typical current profit objective based on current US statutory risk based capital required during the life of the contract. This change was made because it was anticipated that other examples of specimen contracts sold under the conditions and knowledge available at other times in the past might be useful to illustrate as well. It was decided to use a profit objective typical of current product pricing at all past dates in order to make the results as comparable as possible, with differences solely due to the interest rates prevailing at (and after) issue. Appendix 1 shows the full details of the product pricing and other model assumptions.

These annuities are assumed to have been issued on December 31, 1970 and to have been exposed to the fluctuations in interest rates that occurred since that time in order to examine the effects of these methods under actual conditions. Limited illustrations are also provided of annuities issued on other dates in order to examine the differences in earnings emergence that can occur from the slope of the yield curve at date of issue.

The reason for choosing the end of 1970 as the issue date is that a complete series of US Treasury yields is available at all year ends from that point on, as are a complete series of yields on corporate long term bonds. Further, during the intervening three decades, there have been periods of:

- Slowly rising interest rates and slowly falling interest rates;
- Rapidly rising interest rates and rapidly falling interest rates;
- Strongly positive yield curves, flat yield curves and inverted yield curves; and
- Periods of relatively wide quality spreads between corporate bonds and Treasury bonds as well as periods of relatively narrow spreads.

This diversity of financial market experience (documented both in Chart 4 and in Appendix 2) is very useful in examining the ability of various combinations of asset and liability measurement bases to be used to assess the various earnings profiles of the entity to see which most closely reflected business reality.

In the United States, a deep liquid market for securities exists that can be used to construct a set of cash flows that can be aggregated with the same expected cash flow characteristics as the expected cash flows under each of these contracts. The same is true in many, but not all economically developed countries. The lack of such deep liquid securities' markets in many lesser-developed countries where even modest amounts of securities can move prices materially adds to the reasons for the development of insurance and investment liability methods that are consistent with the amortized cost asset measurement methods allowed under IAS 32/39.

In developing the results of this project it was assumed that all available cash flows are invested in fixed income assets. Two classes of fixed income instruments were used – coupon paying publicly traded corporate bonds and zero coupon “strips” of those bonds. A strip is a synthetic zero-coupon bond created by selling the rights to each individual cash flow of a coupon-paying bond. For the purposes of this model, bonds and strips are assumed to be always available in any amount and any term to maturity. Yield rates

for maturities beyond the observable yield curve were set equal to the rates on the observable bond with the longest maturity.

For the purpose of this project, it is assumed that the insurer did not conduct internal credible mortality studies in the period after 1970 and only recognized that its mortality expectations were inadequate when the 1983 industry annuity mortality table was published. While publication of this table may not have had such a dramatic effect in practice, this historical example is used as a proxy for “new information” becoming available to an insurer that causes future best estimates to be changed to reflect adverse conditions, analogous to loss recognition.

Methods

The ACLI has proposed that the IASB consider an insurance contract accounting standard that is based on a HTM concept as an optional measure for insurance liabilities consistent with the measurement choices for assets. The assumptions would be locked in at the date of issue of the contract until such time as losses are recognized. Under this method there would be immediate “loss recognition” once it was recognized that experience materially worse than that assumed at the date of issue could reasonably be expected in the future.

The methods used in this project result in the same liability and market value margins (MVMs) at issue under both the HTM and FV methods. The charts in this Joint Research Paper have been based on the premise that HTM assumptions would continue to be locked-in for the life of the contract, only being unlocked at the time of any “loss recognition” to reflect then current yields on the incremental liability required. The findings indicate that earnings under HTM emerge in a pattern similar to the earnings under Fair Value when experience equals original expectations.

At the date of issue of the contracts, initial liabilities were calculated using interest rates that reasonably reflected the “A” quality corporate rates less expected defaults and asset administration expenses. The “A” rate was used because it was representative of the level of risk that the life insurance industry has been willing to accept during most of the period in question and hence, closely reflects market reality. In calculating life insurance liabilities, each expected payment was increased by adding a margin such that the “profit at issue should be zero” even though industry expected to (and generally did) make a profit on these products.

The ACLI and the IAA feel that this FV liability calculation basis closely reflects actual market conditions. The ACLI and the IAA recognize that the quality implied in the yield curve to be used for insurance liability calculations has not yet been determined by the IASB and that some feel that risk free rates should be the reference yield curve. It may turn out that the IASB determines that the use of the risk free interest rate curve should

be stipulated and that negative MVMs should be prohibited. In order that the IASB can examine the impact of such rules based constraint, Section H also shows the effect of such an approach.

Using risk free rates would result in significant losses at issue on products where profits were anticipated at issue (and obtained in reality) unless negative MVMs were allowed to produce a zero profit at issue. This is equivalent to not reflecting for a liquidity premium. To produce zero profit at issue, an entity could use either discount rates that are not risk-free or risk-free rates with resultant negative MVMs. The ACLI and IAA feel that a meaningful accounting standard should avoid what is in effect a “required” loss at issue on business expected to be profitable. They also believe that the negative MVMs required in this case to bring about an initial breakeven condition would be very difficult for all but the most sophisticated users of financial reports to understand. Therefore, it was decided that the best way to reflect the fair value with this objective in mind was to determine liabilities with reference to the quality of securities from which participants in the marketplace actually derive market prices. We believe such direct market calibration is consistent with the underlying objectives of fair valuation methods.

For simplicity, the yield spread between corporate bonds and risk-free assets was assumed to remain constant throughout time. As can be seen from the charts and rates shown in Appendix 2, this assumption is not consistent with the financial markets. Nonetheless, it is felt that the use of this simplifying assumption does not materially affect the comparisons derived in this report.

Earnings

Note that the earnings shown in this report exclude earnings on “implied capital” (the statutorily required risk based capital in the US) that were included under all methods in the first report. Although this change has resulted in minor differences between this report and the findings included in the first report, the earnings measure shown here more clearly highlights the differences in earnings emergence of both fair value and amortized cost methods and possible asset and liability measurement bases. In other respects, the income shown is consistent with current IASB requirements.

Excluding the earnings on implied capital was accomplished by using a “profits released” model where assets are maintained equal to the liability calculated under fair value. Assets in excess of those needed to support the fair value liability are assumed to be available for distribution to shareholders.

Implied capital can exist when a product is priced to yield a return on explicit regulatory or economic capital and when a product is priced on an accounting basis that is different from that used for financial reporting. The annuities illustrated in this report were priced to yield a 15% return on earnings measured on a statutory (US regulatory) accounting



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basis while maintaining risk capital equal to 5% of statutory liabilities. The earnings illustrated, however, use methods that differ from statutory accounting.

The illustrated financial reporting methods force a breakeven at issue by setting the MVMs such that the present value of expected policy cash flows plus the present value of MVMs equals the net product cash flow at issue. Thus, a provision for the implied capital embedded in the premium is accounted for in the initial liability. However, in subsequent periods if assets are maintained equal to statutory liabilities and these amounts do not equal the liabilities calculated under the methods used to report earnings, implied capital will develop.

Findings

It is anticipated that the IASB will propose an insurance contract financial reporting standard based on liability measurement using fair value concepts. The life insurance industries of several countries have reacted by asserting that such an accounting standard can introduce spurious volatility in the earnings of insurers when assets are not measured on a consistent basis. Our research supports that industry view.

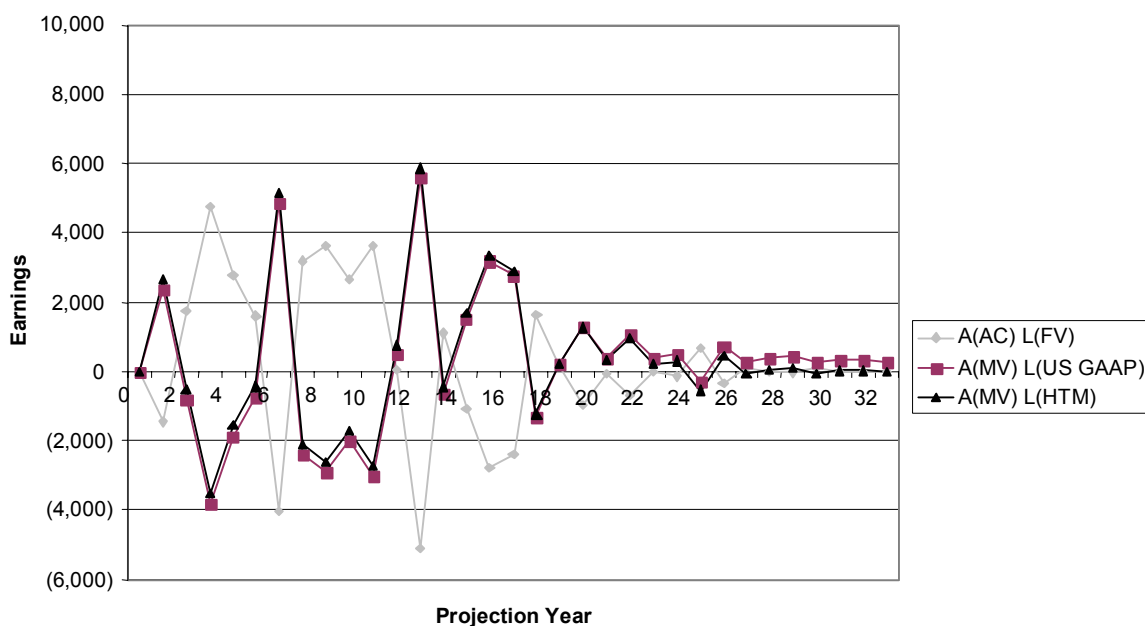
A. Impact on earnings when assets used by an insurer to back the annuity liability have expected cash flows with characteristics that *exactly* match the expected cash flows from the annuity (plus market value margins calibrated to produce a zero profit at issue) when actual experience emerges as priced

Two liability measurement methods developed for this project that produce earnings reasonably reflecting the underlying business reality for the annuity investigated are shown.

- The ***“Held-to-Maturity”*** (HTM) liability measurement method corresponding to the amortized cost method of measuring assets.
- The ***“Fair Value”*** (FV) liability measurement method corresponding to a market value method of measuring assets.

In a volatile economic environment, if assets and liabilities are not measured consistently, the earnings of life insurers will **not** reflect the underlying business reality **even when actual experience emerges as expected at issue**. Even an informed user of financial statements may *not be able to discern* the underlying business reality. This results from the “financial noise” from changes in interest rates that may completely overwhelm the underlying business reality. Note that the earnings produced when assets are measured at fair value and liabilities are measured at amortized cost move in exactly the opposite direction of earnings produced when assets are measured at amortized cost and liabilities are measured at fair value. Chart 1¹ illustrates the income patterns from three combinations of asset and liability measurement methods.

Chart 1- Dissimilarly Valued Asset & Liabilities
Corporate Strips Strategy: Invest cash pro-rata to liability CF
Mortality Experience = Pricing



¹ Each line in Chart 1 and subsequent charts represent earnings that emerged from our model under a specific combination of asset and liability valuation methods. The legend to the right of the graph indicates valuation method used for both assets (AC=amortized cost, MV=market value) and liabilities (US GAAP=US GAAP, HTM = held-to-maturity, FV=fair value).

By contrast, if assets and liabilities are similarly measured, the income from each of these methods is broadly similar in magnitude to the income obtained using current US GAAP. Chart 2 illustrates the income patterns from the three methods when assets and liabilities are valued consistently and experience unfolds in exactly the same way as was expected in pricing. The same scale as Chart 1 is used in order to illustrate the extreme earnings volatility illustrated in Chart 1.

When significant proportions of the assets used by an insurer to back such liabilities are designated as having different attributes, such as available-for-sale or a mixture of amortized cost, available-for-sale, or trading, a life insurer's earnings or comprehensive earnings (change in equity) may not reflect the underlying business reality if the liabilities are measured using solely either the HTM or the FV method. These effects are illustrated in Charts 12 – 15.

CHART 2 - Similarly Valued Assets & Liabilities
Corporate Strips Strategy: Invest cash pro-rata to liability CF
Mortality Experience = Pricing

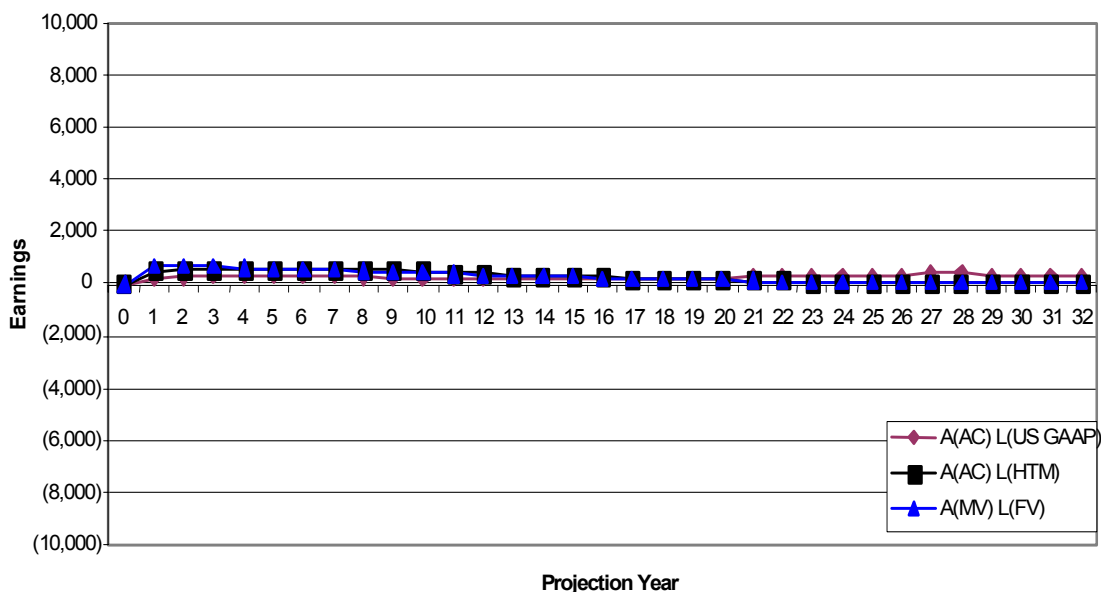


Chart 3 contains the same data as Chart 2, but is scaled vertically so that the differences in earnings can be more easily seen. The income from the FV method is always equal to the release of the duration-specific portion of the MVM year by year. FV earnings are greater than HTM earnings in the early years if the yield curve is positively sloped when the policy is sold (as was the case at the end of 1970). If actual experience turns out to be as expected at the time of pricing, the research conducted shows that the FV and HTM earnings patterns are fixed at the date of issue.

Due to (1) differences in the discounting methodology (FV and HTM use net interest rates after default while US GAAP SFAS 60 uses expected earnings rate less a provision for adverse deviation), (2) differences in risk adjustment approaches (FV and HTM MVMs are expressed in terms of the percentage of risk-based capital needed to produce a zero profit at issue, while US GAAP SFAS 60 uses a 1% annual mortality improvement) and (3) the release from risk approach under the FV and HTM bases compared to the build up of provisions for adverse deviation in the early years in the US GAAP example, the income under each of the FV and HTM methods is greater for this product in the early years and smaller in the later years than the income reported under US GAAP .

CHART 3 - Similarly Valued Assets & Liabilities
Corporate Strips Strategy: Invest cash pro-rata to liability CF
Mortality Experience = Pricing

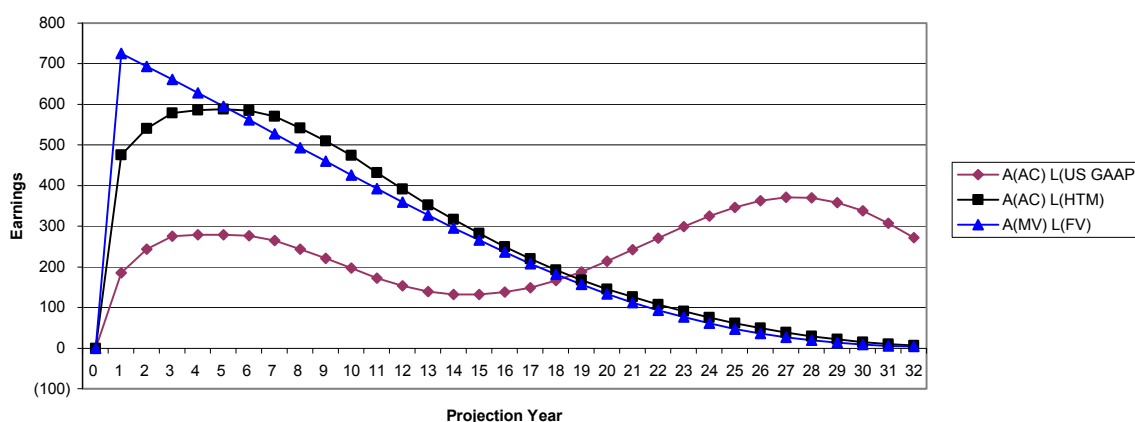
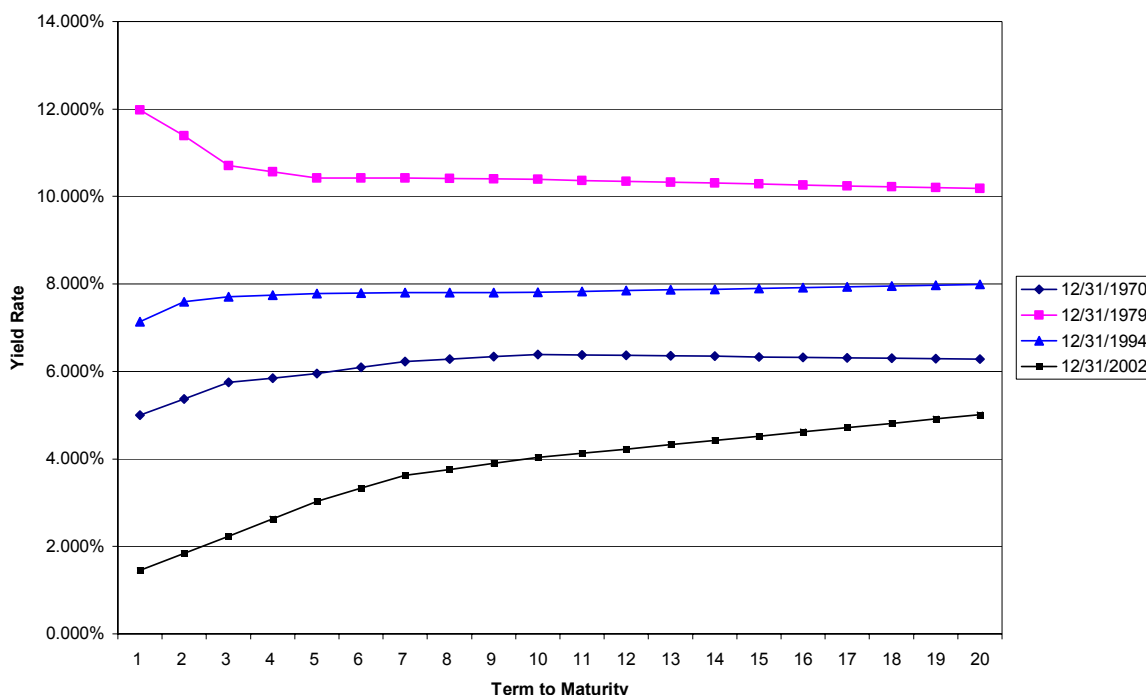


Chart 4 shows how the levels of the interest rate curves have varied over the last 32 years, as well as how the slopes of the interest rate curves have changed. Note that the yield curve at the end of 2002 was relatively low, with a very positive slope. The yield curve at the end of 1970 was somewhat higher and less positively sloped. The yield curve at the end of 1994 was higher still and was almost flat. Finally, the yield curve at the end of 1979 was very high and had a negative slope.

Chart 4 - Selected Treasury Curves



Charts 5a-5c illustrate what projected earnings would be like if this product was priced and issued under the actual interest rate environments in 1979, 1994 and 2002. For each illustration, earnings are based on the pattern of actual interest rates from issue through 2002 with interest rates remaining at 2002 levels for the remainder of the projection. The product was initially priced at each of the selected year ends using the same methodology outlined in the “Findings” section except that the earned rate and the statutory valuation rate assumed in pricing were adjusted to be consistent with the interest rate levels at the time the product was priced. These charts are shown under the assumption that (1) assets are invested such that their cash flow characteristics match those liabilities plus MVMs, and (2) actual experience equals that assumed in pricing.

Chart 5a illustrates the earnings from a product priced and issued in 1979 when the yield curve was inverted. When the yield curve at issue is inverted, earnings produced when assets are measured at amortized cost and liabilities are measured on an HTM basis are recognized earlier than earnings produced when assets are measured at market value and liabilities on a FV basis. The latter always equal the release of the MVMs when experience matches that assumed in the pricing of the product and asset cash flows match liability cash flows.

Chart 5a - Earnings if Priced & Issued at 12/79

Corporate Strips Strategy: Invest cash pro-rata to liability CF

Mortality Experience = Pricing

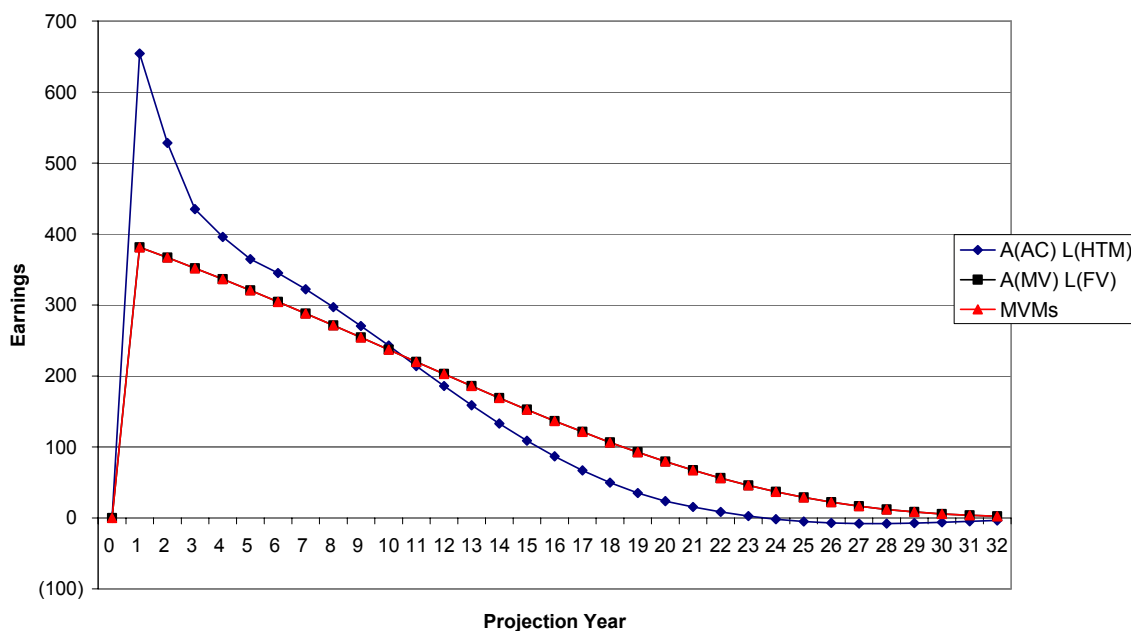


Chart 5b illustrates earnings from a product priced and issued in 1994 when the yield curve was almost flat. When the yield curve has little slope earnings produced when assets are valued using amortized cost and liabilities use an HTM basis are very similar to earnings produced when assets are measured at market and liabilities on a fair value basis.

Chart 5b - Earnings if Priced & Issued at 12/94

Corporate Strips Strategy: Invest cash pro-rata to liability CF

Mortality Experience = Pricing

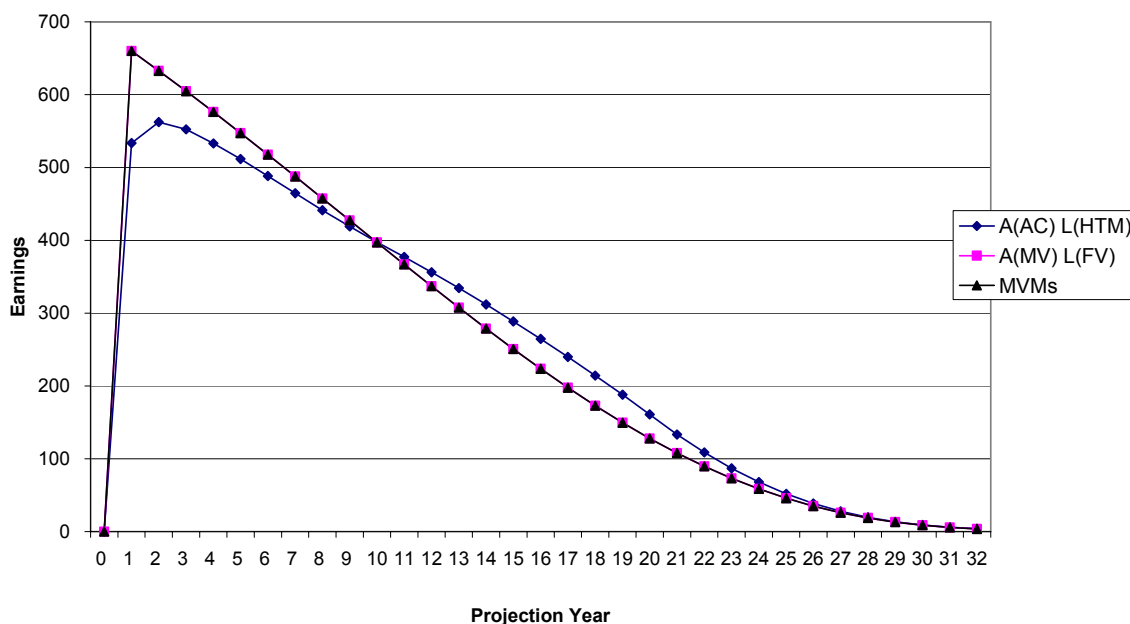
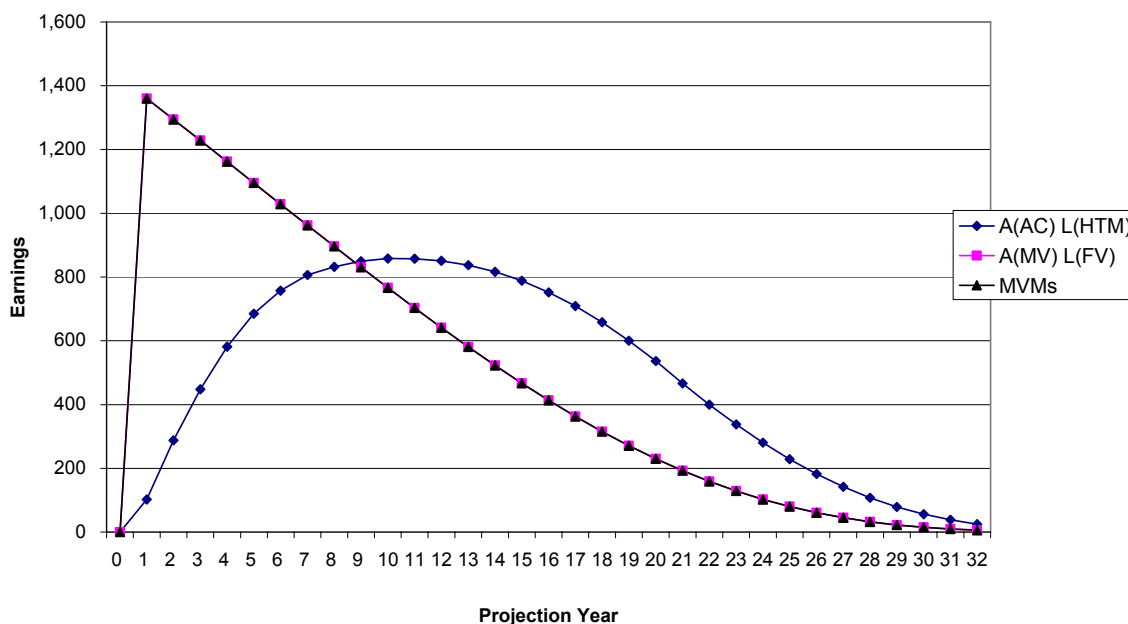


Chart 5c illustrates the earnings from a product priced and issued in 2002 when the yield curve had a steep positive slope. In this case, early year earnings produced when assets are measured at market and liabilities at FV exceed the earnings produced when assets are measured at amortized cost and liabilities at HTM. As can be seen, the shape of the yield curve at issue drives the relationship between earnings measured on the two bases.

Chart 5c - Earnings if Priced & Issued at 12/2002

Corporate Strips Strategy: Invest cash pro-rata to liability CF
Mortality Experience = Pricing



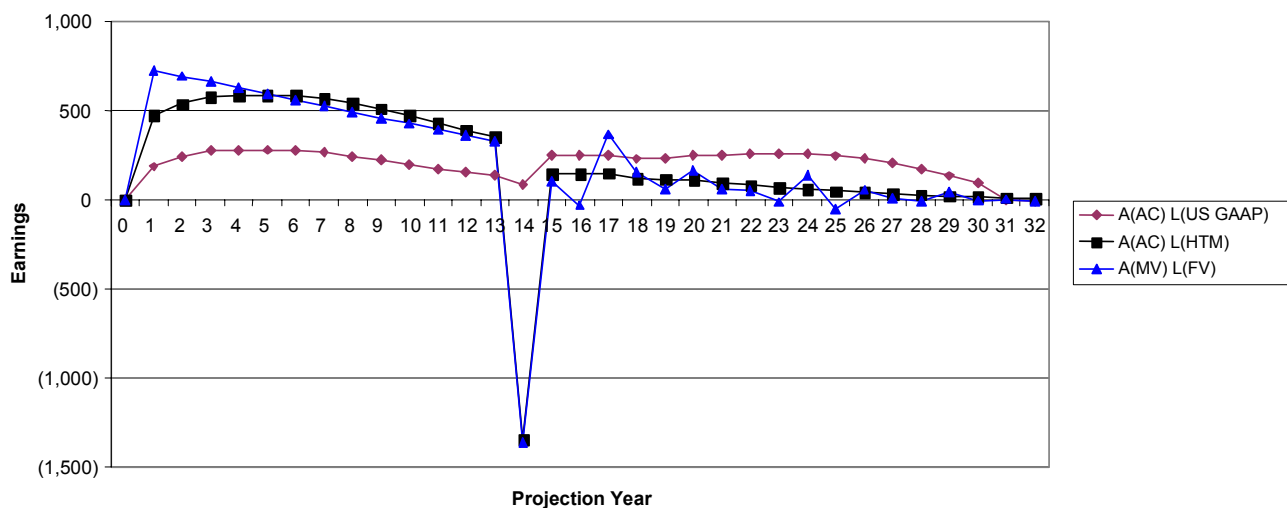
It should be noted that **differences** similar to those illustrated in Charts 5a - 5c **would arise in the accounting value of the bond assets alone, even if no change in the level or slope of the yield curve took place after the purchase of the bond.**

B. Impact on earnings when assets used by the insurer to back the liabilities have expected cash flows with characteristics that closely match the expected cash flows from the liabilities and actual experience *does not* emerge as priced for

When both assets and liabilities are valued consistently and when the expectations about asset and liability cash flows are not realized and losses are recognized, the earnings reported using either the HTM method or the FV method have similar patterns and similar magnitudes. Chart 6 illustrates the effect of the realization in year 14 that mortality expectations were inadequate (when information in the form of a new industry wide annuity mortality table was published); but not so inadequate as to result in immediate loss recognition under US GAAP. Under both the FV and HTM methods additional assets are needed to back the insurance liabilities. However, under US GAAP additional assets are not needed to fund the liabilities, with the resulting earnings on the assets falling to the bottom line. This is because the US GAAP liability is higher than the liability under either FV or HTM method due to assumed mortality Provision for Adverse Deviation (PAD) described in Appendix 1.

Note that this project uses a “loss recognition” methodology that results in the same loss being recognized under both the FV or HTM methods in year 14. The ACLI and the IAA both recognize that the proper loss recognition criteria and methodology may require additional guidance from the IASB or the IAA.

CHART 6 - Similarly Valued Assets & Liabilities
Corporate Strips Strategy: Invest cash pro-rata to liability CF
Mortality Experience < Pricing



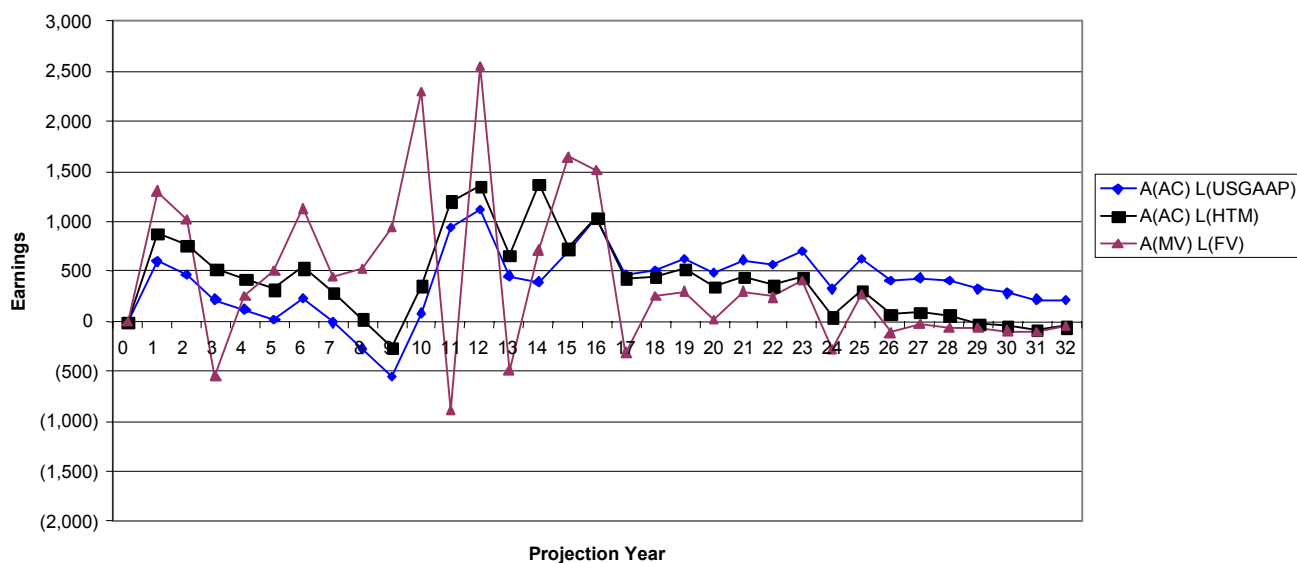
C. Impact on earnings when assets used by the insurer to back the liabilities have expected cash flows with characteristics that *do not* closely match the expected cash flows from the liabilities

The more the expected asset and liability cash flows (including MVMs) differ, the more divergent are the patterns and magnitudes of the earnings reported using the HTM method and the FV method, **even when best estimate mortality is realized**. While the earnings patterns generally move in the same direction, their swings are certainly greater under the FV method, which gives immediate recognition to the mismatch between expected asset and liability cash flows than under the HTM method. While rapid recognition of asset/liability mismatches could be regarded as desirable, volatility may be more noticeable when reporting period yields are affected by one or more large transactions, e.g., in markets that are neither deep nor liquid. Chart 7 shows earnings that would emerge when available cash flow is invested in a portfolio of three bonds. 50% of available cash flow is invested in 10-year bonds, 30% is 20-year bonds and 20% in 30-year bonds.

CHART 7 - Similarly Valued Assets & Liabilities

Long Bond Strategy

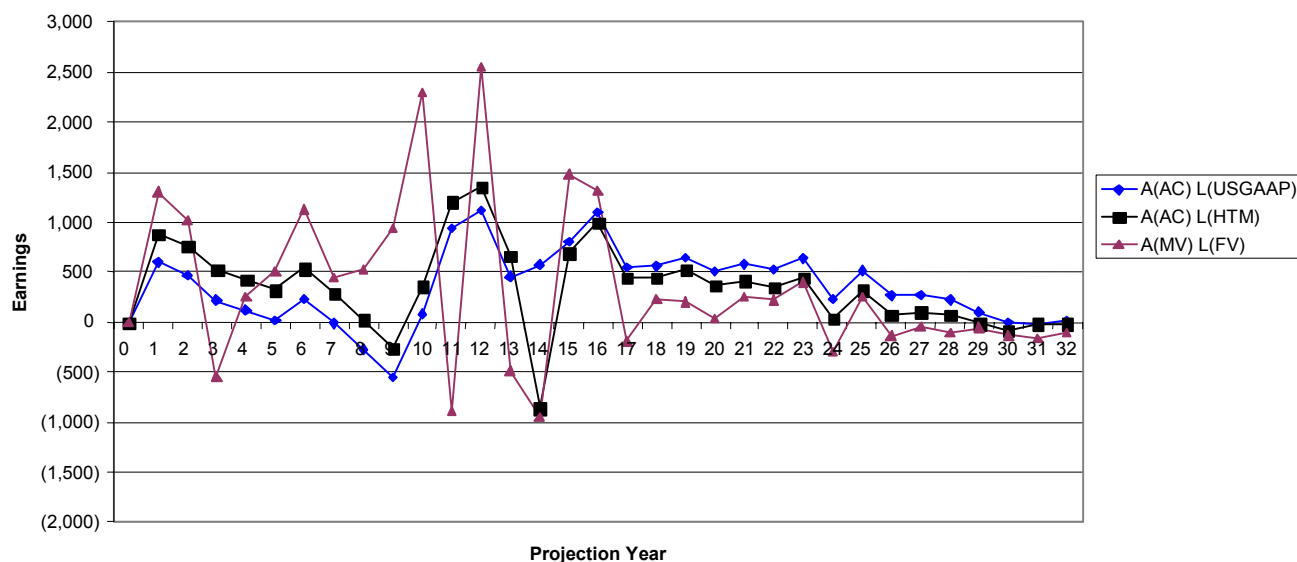
Mortality Experience = Pricing



The more that the expected asset and liability cash flows differ, the more divergent are the patterns and magnitudes of the earnings reported using the HTM method and the FV method. These divergences in income patterns and their magnitudes become larger when the expectations about liability cash flows are **not** realized. Chart 8 shows earnings from the previous chart coupled with the realization in year 14 that mortality expectations were inadequate.

CHART 8 - Similarly Valued Assets & Liabilities

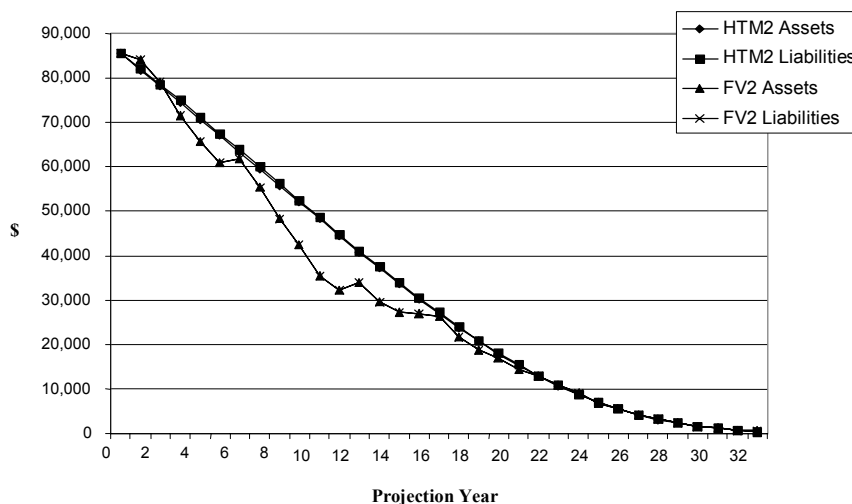
Long Bond Strategy
Mortality Experience < Pricing



D. Balance sheet impact and considerations

The balance sheet (Chart 9) produced when assets and liabilities are measured consistently is much more stable over time when assets are measured at amortized cost and liabilities are measured using the HTM method, than when assets are measured at market value and liabilities are measured using the FV method, *even when conditions produce the same pattern and magnitude of reported earnings under the two methods.* This means that readers of the financial statements need to be more sophisticated in the use of analytical tools to discern the underlying business reality when assets and liabilities are reported at fair value.

Chart 9: Balance Sheet Values
Based on Similarly Valued Assets and Liabilities
Corporate Strips Strategy: Invest cash pro-rata to liability
Mortality Experience = Pricing



IAS 32/39 currently allows financial assets to be measured using any of three designated measurement bases (held-to-maturity, available-for-sale, and trading). The IASB currently is considering allowing these assets on an individual basis to be designated as any of these bases at the date of first application of IAS.

The IASB will likely propose that insurance liabilities be measured using national accounting standards during Phase 1 of its insurance contracts project, be disclosed on a fair value basis sometime during Phase 1, and be measured using a FV method yet to be fully defined at a later date in Phase 2. The IASB also proposes to allow insurers to adopt “improvements” to current national standards during the period between first time application and Phase 2 implementation. Two important considerations regarding the introduction to Phase 1 and Phase 2 that are indicated as a result of this research are:

- Great care needs to be taken in the designation of asset measurement bases for first time application, depending on the characteristics of the national insurance liability measurement standard.
- Consideration should be given by the IASB to permit re-designation of asset measurement bases at the time any material “improvement” in liability accounting is adopted, including the adoption of Phase 2.

E. Impact on earnings when assets used by the insurer to back the liabilities have expected cash flows with characteristics that closely match the expected cash flows from the liabilities and actual experience emerges as priced for

Chart 10 shows the pattern of the expected future best estimate benefit and expense payments at the date of contract issue (in white) together with the corresponding best estimate of asset cash flows reflecting MVM requirements on each such payment (in black) such that the profit at issue was zero.

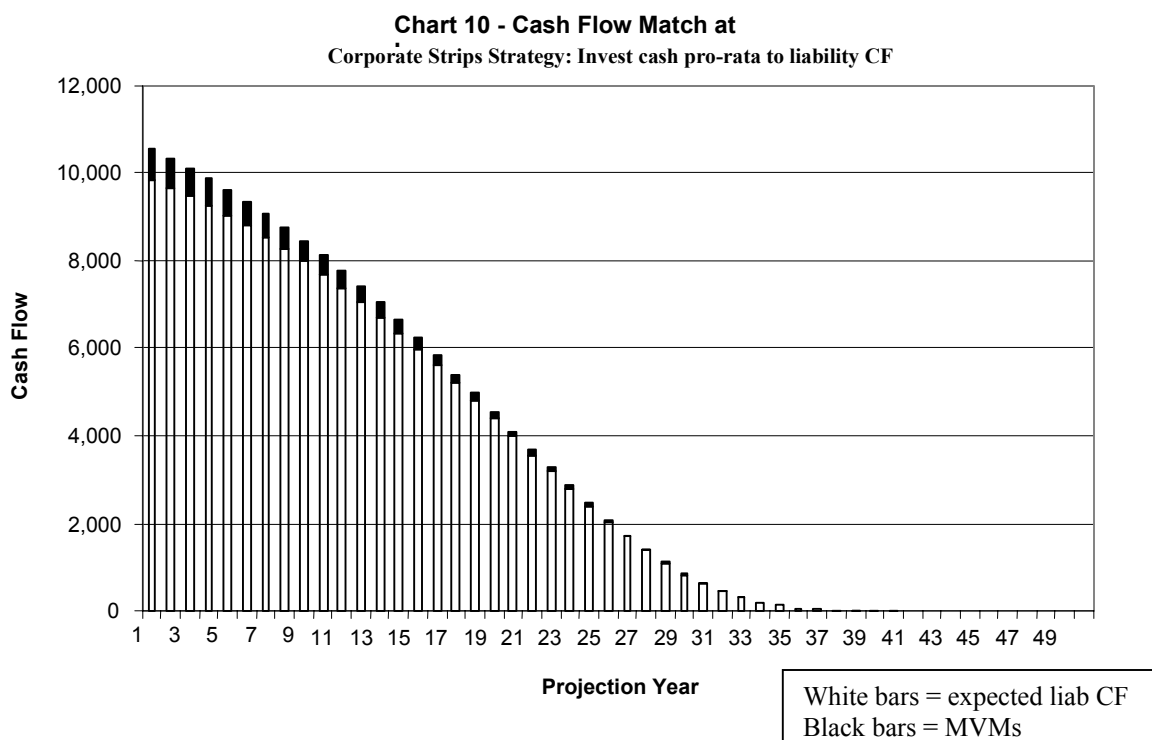
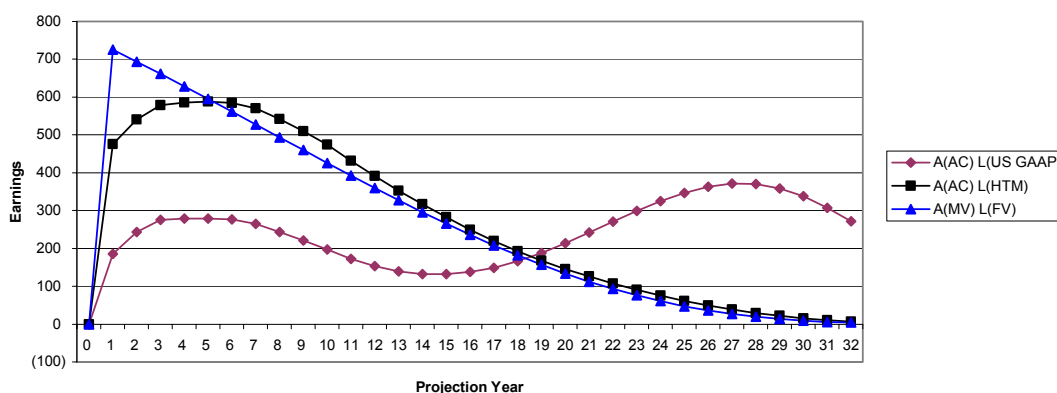


Chart 11 (a repeat of Chart 3) shows the earnings patterns that would be produced when experience under the policy emerges exactly as expected, both when the assets are measured at amortized cost and the liabilities are measured using either the HTM method or current US GAAP, as well as when the assets are valued at market value and the liabilities are also valued at fair value. It shows that the earnings patterns under all three consistent measurement combinations are of similar magnitude. It also shows that the earnings under the FV method would equal the duration specific portion of the MVM for each year. The HTM earnings pattern reflects the shape of the interest rate curve at the time of policy issue – positively sloped, relatively flat or inverted.

CHART 11 - Similarly Valued Assets & Liabilities
Corporate Strips Strategy: Invest cash pro-rata to liability CF
Mortality Experience = Pricing



The difference between the earnings derived under the two methods examined in this project and the earnings resulting from the application of the current US GAAP arise from the “back-ending” of risk margins assumed as plausible under US GAAP compared to the risk-capital based MVMs assumed to be typical under the new methods. Thus, the assumption of a margin that reflects continuously improving mortality beyond that used in the pricing basis defers the illustrated US GAAP earnings emergence compared to the HTM and FV bases. Note that the methods applied here to provide risk margins on this type of contract are not necessarily uniquely tied to these methods. They have been used here as being illustrative of these types of margins or MVMs that might be used in practice.

Many insurers in the United States designate assets notionally allocated internally as backing annuity liabilities as available-for-sale (AFS). Chart 12 shows that this produces

reasonable earnings when liabilities are measured in HTM but unreasonable earnings when liabilities are measured on a FV basis.

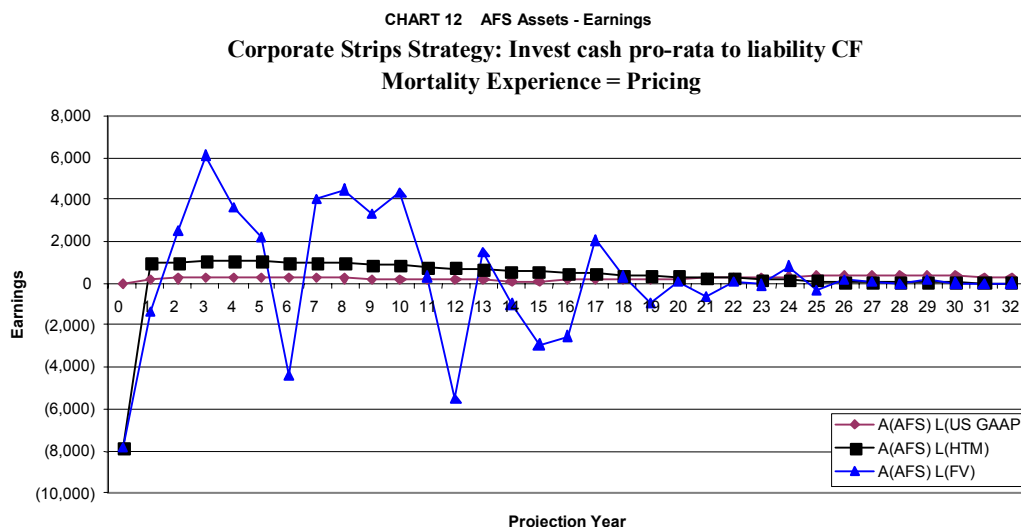
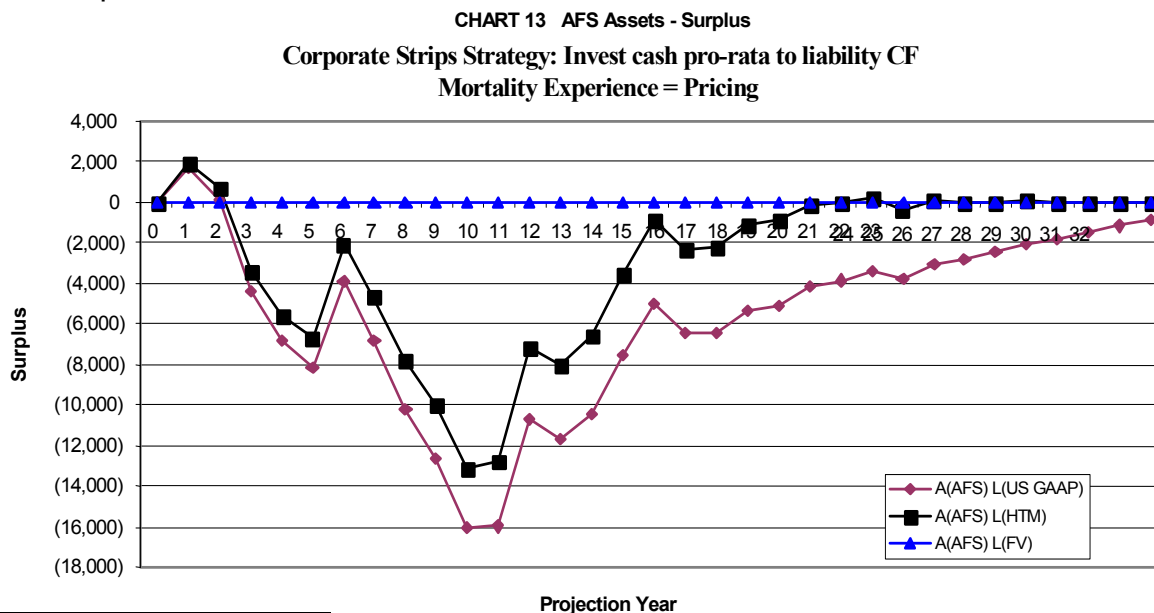


Chart 13 shows that, while the practice of designating assets as AFS can produce reasonable earnings when liabilities are measured on a “book value”² basis, it can produce unrealistic comprehensive income (changes in equity). Since analysts have come to regard changes in equity as less reliable than the earnings numbers, this effect may not be as significant as similar effects on earnings in the current US environment. Chart 13 shows that, when liabilities are measured on a FV basis and assets on an AFS basis, comprehensive income is reasonable.



² “Book Value” is often used to refer to historical cost accounting methods such as amortized cost.

Chart 14 illustrates the situation where a varying proportion of the asset portfolio is designated as AFS with the remaining portion at HTM, coupled with either an HTM liability or a FV liability measurement basis.

- For “100, HTM” where 100% of the assets are designated as AFS and liabilities are measured using HTM earnings are the same as illustrated in Chart 3 where assets were measured at amortized cost with HTM liabilities.
- For “20/80, HTM” where 20% of assets are designated as AFS, with the remaining assets designated as HTM and liabilities are measured using HTM, the earnings are exactly the same as when 100% of the assets are designated as AFS.
- For “20/80, FV” where 20% of assets are designated as AFS, the rest designated as HTM and the liabilities are at FV, earnings are quite volatile reflecting the change in liability values with changing interest rates whereas changes in asset values are excluded from earnings.

When asset cash flows match the projected liability cash flows plus MVMs with assets intended to be held to maturity, earnings emerge consistently under an HTM liability method even though some assets are designated as AFS. This suggests that, ignoring the effect on equity; insurers can use a mixture of HTM and AFS assets to produce reasonable earnings without requiring a loosening of the HTM rules on intention/ability to hold them.

CHART 14 - AFS Assets - Earnings
Corporate Strips Strategy: Invest cash pro-rata to liability CF
Mortality Experience = Pricing

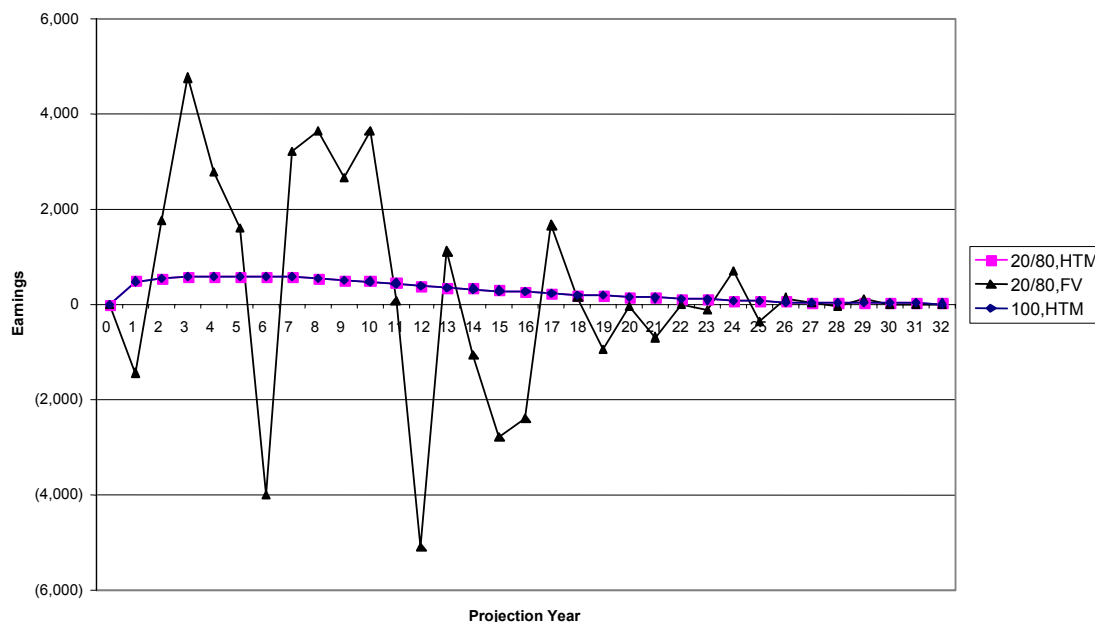


Chart 15 illustrates the same three asset and liability valuation combinations as in Chart 14. Here the impact on surplus is shown. Neither FV nor HTM liability methods produce reasonable changes in equity when the assets are held as a mixture of HTM and AFS. However, a mixture of FV and AFS assets would produce reasonable comprehensive earnings when liabilities are measured using a FV basis.

CHART 15 - AFS Assets - Surplus
Corporate Strips Strategy: Invest cash pro-rata to liability CF
Mortality Experience = Pricing

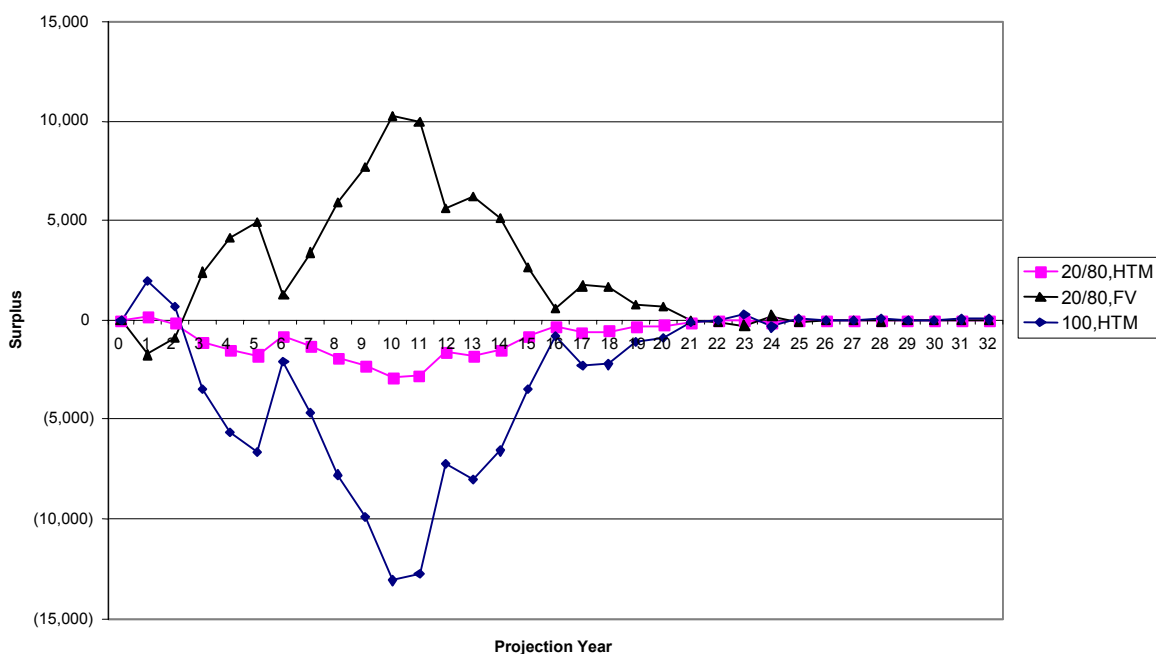
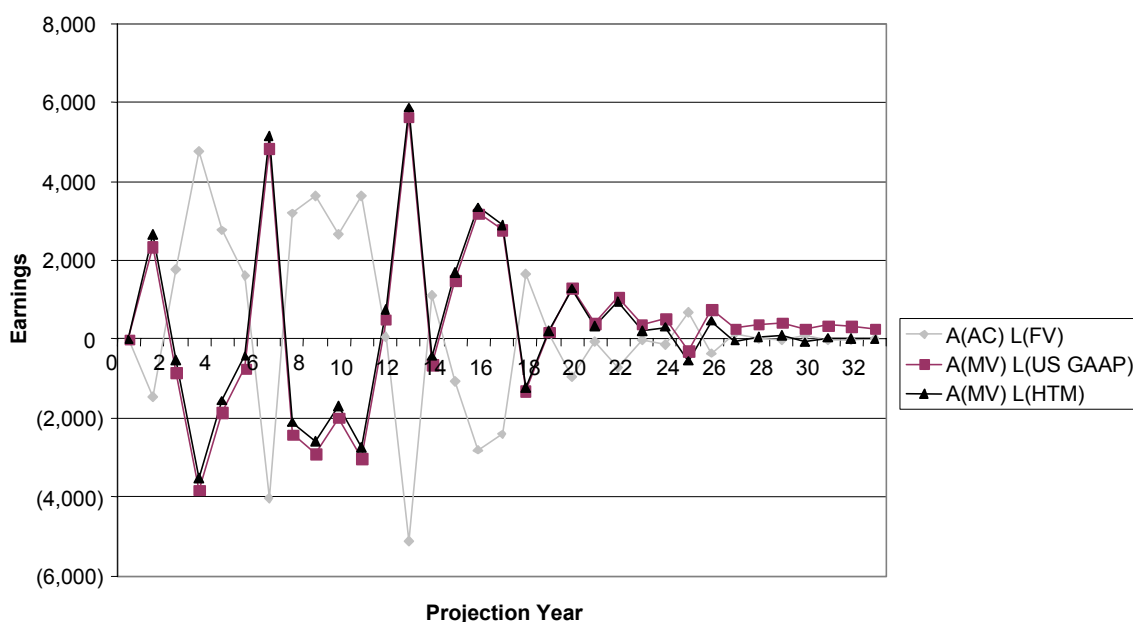


Chart 16 (a repeat of Chart 1) shows the earnings patterns that would be produced when experience under the policy emerges exactly as expected, both when the assets are measured at FV (i.e. the assets are designated as “traded”) and the liabilities are measured using the HTM method or using current US GAAP, as well as when the assets are measured using amortized cost and the liabilities are measured using the FV method. The earnings patterns are volatile and disguise the underlying real business operation. Further, the earnings patterns produced by “book value” liabilities combined with “fair value” assets are exactly the opposite of the earnings patterns produced by “fair value” liabilities and “book value” assets. **The magnitude of the earnings (both positive and negative) is up to six times the magnitude of the earnings shown in Chart 11 when assets and liabilities are consistently measured. This volatility results from the long duration of the insurance liability.**

Chart 16- Dissimilarly Valued Asset & Liabilities

Corporate Strips Strategy: Invest cash pro-rata to liability CF

Mortality Experience = Pricing



The “financial noise” that dominates reported earnings using inconsistently measured assets and liabilities makes it almost mandatory that life insurers carefully designate the asset measurement bases at the date of first time application so that the liability measurement bases are consistent. It should be noted that, even if the national insurance accounting treatment permitted in Phase 1 is more consistent with amortized



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cost concepts, the HTM criteria might be too stringent for entities to designate assets as HTM, unless they know there will be an opportunity to re-designate assets when liability accounting methods change.

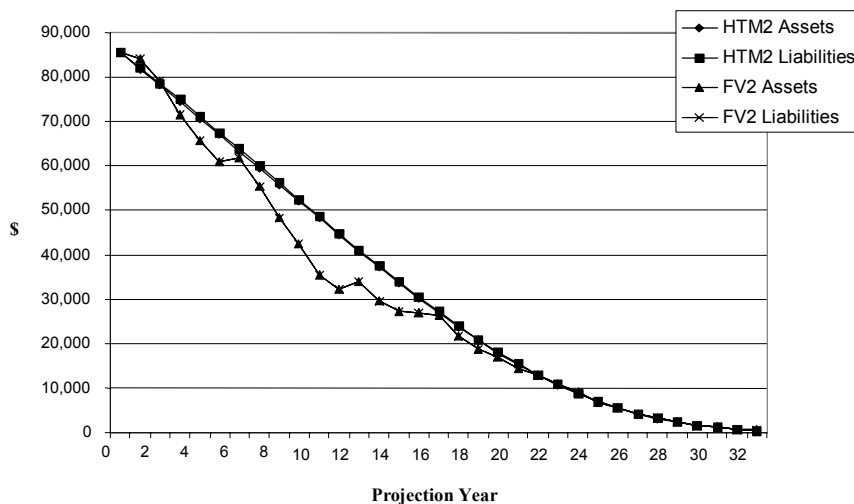
If Phase 2 of the insurance accounting project imposes a fair value liability measurement basis, the IASB should consider giving life insurers an opportunity to re-designate assets at that time.

The ACLI and the IAA understand that the IASB does not currently intend to require that all financial assets be measured on a fair value basis by the date of implementation of Phase 2 of its insurance contract project. If financial instruments are allowed to be measured on a basis other than fair value by other financial intermediaries, e.g., on an amortized cost basis, the question must be asked whether the IASB has an obligation to effectively impose more restrictive measurement methods on the insurance industry in order to produce reasonable earnings. As long as other financial institutions continue to be allowed to measure assets and liabilities on other than a FV basis, there is a strong case for allowing the same latitude to the insurance industry. In such a case, given the balance sheet volatility shown in Chart 16, the HTM liability basis advocated by the ACLI should be considered by the IASB as a permitted liability method for insurance contracts until such time as all assets are required to be measured using the FV method by all statement preparers.

The IASB might reasonably ask “if consistently measured assets and liabilities measured at fair value give almost the same earnings patterns as consistently measured assets and liabilities at held to maturity values, why does the US life insurance industry feel that it should have the option to use a held to maturity liability measurement methodology”?

Chart 17 (a repeat of Chart 9) shows the value of the assets and liabilities measured under the HTM method compared to the value of the assets and liabilities measured under the FV method. As can be seen, the balance sheet volatility is more pronounced when the FV method is used, even when pricing expectations are met and investment mismatch risk is minimized. This volatility, “financial noise”, is due to changes in interest rates that impact the measurement of assets differently than the measurement of liabilities.

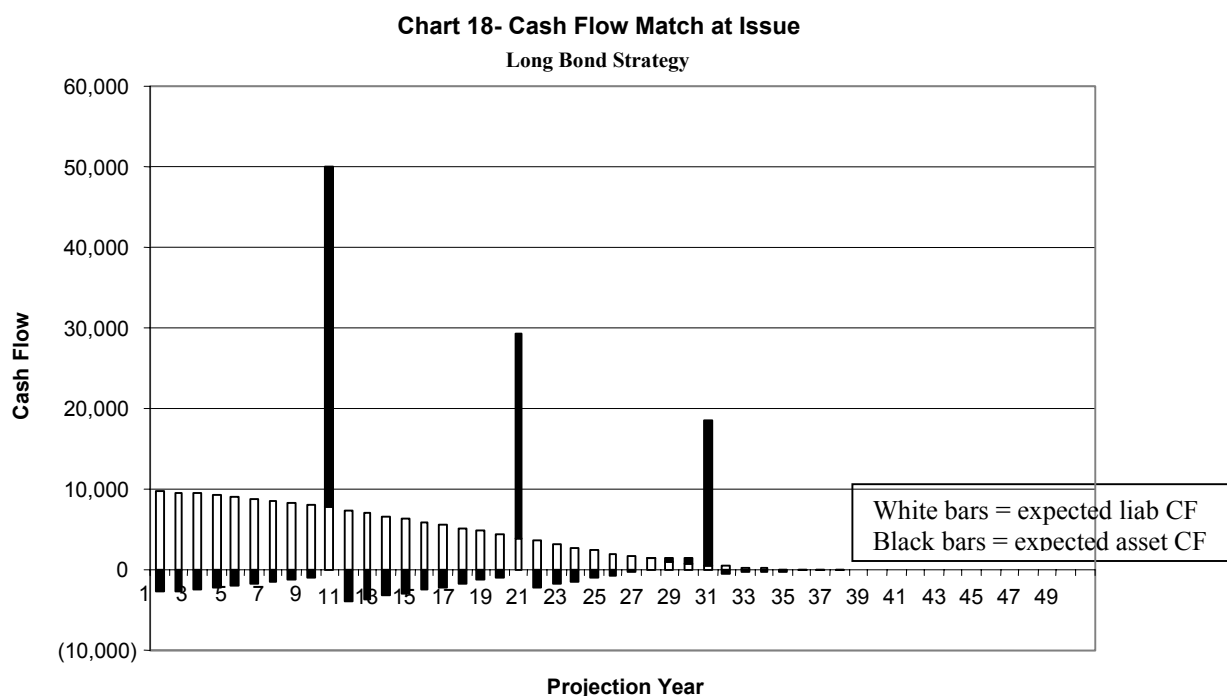
Chart 17: Balance Sheet Values
Based on Similarly Valued Assets and Liabilities
Corporate Strips Strategy: Invest cash pro-rata to liability
Mortality Experience = Pricing



If the approach taken by this project turns out to be the “agreed upon” application of fair value, even analysts in countries with deep, liquid markets will have to increase the sophistication of their analysis to achieve an understanding of implications concerning future earnings. This is not to suggest that analysts are incapable of such sophisticated analysis. Rather, it suggests that an unfair burden may be placed on the insurance industry relative to other financial intermediaries who compete for capital in the same market place. Considerable cost, effort and sophistication may be required to evaluate the performance of insurers or other financial institutions with long duration liabilities compared to that required to evaluate their closest peer industries and competitors for capital if those competitors continue to use amortized cost methods of reporting.

F. Impact on earnings when assets used by the insurer to back the liabilities have expected cash flows with characteristics that *do not* closely match the expected cash flows from the liabilities

The previous discussion has focused on the analysis of situations in which there is no financial reporting noise generated in the absence of expected mismatch risk. However, a fundamental motivation for FV of the liabilities of insurance contracts and those of other financial instruments has been the desire to reflect economic reality when insurers make explicit economic “bets” in their investment position. Chart 18 shows one such set of bets where the characteristics of the asset cash flows do not match the characteristics of the liability cash flows, where the liability cash flows include market value margins and associated risk based capital.



In this example, the insurer’s investment strategy is to produce expected asset cash flows very close to the expected liability cash flows, but invests assets covering the MVMs in 10-, 20- and 30-year bonds (50% in 10 year bonds, 30% in 20 year bonds and 20% in 30 year bonds). While investing in assets covering only 3 types of securities is not typical in the industry, the assumption provides a useful and simple example for this project.

To summarize the situation:

- Significant asset cash flows will be reinvested in years 10 and 20. The “bet” will be won or lost by comparing the obtained reinvested asset yields to the initial yields at policy issue.
- The small deficit in asset cash flows in years 1-9 and 11-19 represent additional amounts that must be “borrowed” either at issue or each year as needed. Due to the simplicity of the model project, this disinvestment, while slight, represents the choice of another “bet” that is made each year.
- The “bet” is made on the asset side against a liability, which is fixed and illiquid.
- Using the pattern of interest rates from 1970, significant interest rate drops occurred in years 6 (1976) and 12 (1982) even though the general trend in interest rates had risen since the issue date.

With 20/20 hindsight, we can see that the year 10 bet was “won”. The accounting question is when should an entity recognize that the bet has been won. Charts 19 and 20 will help explore that question.

Chart 19 perhaps best reveals the heart of the controversy/uncertainty in evaluating the relative merits of HTM, or current US GAAP vs. FV of liabilities. Both the US GAAP and HTM examples show reasonably consistent earnings when a consistent valuation basis is used for both assets and liabilities. However, the asset cash flow characteristics do not fully match the liability cash flow characteristics. In this example, actual mortality experience equals that expected in pricing, so the only major risk is future reinvestment risk. In this case, both valuation bases (HTM and US GAAP) exhibit similar earnings patterns, with FV showing greater volatility in earnings. Which one is “more” true to the underlying economic reality? For example, the FV gain shown in duration 12 is only realized if the insurer changes its investment policy to “lock in” the gain through sales and new purchases.

CHART 19 - Similarly Valued Assets & Liabilities

Long Bond Strategy

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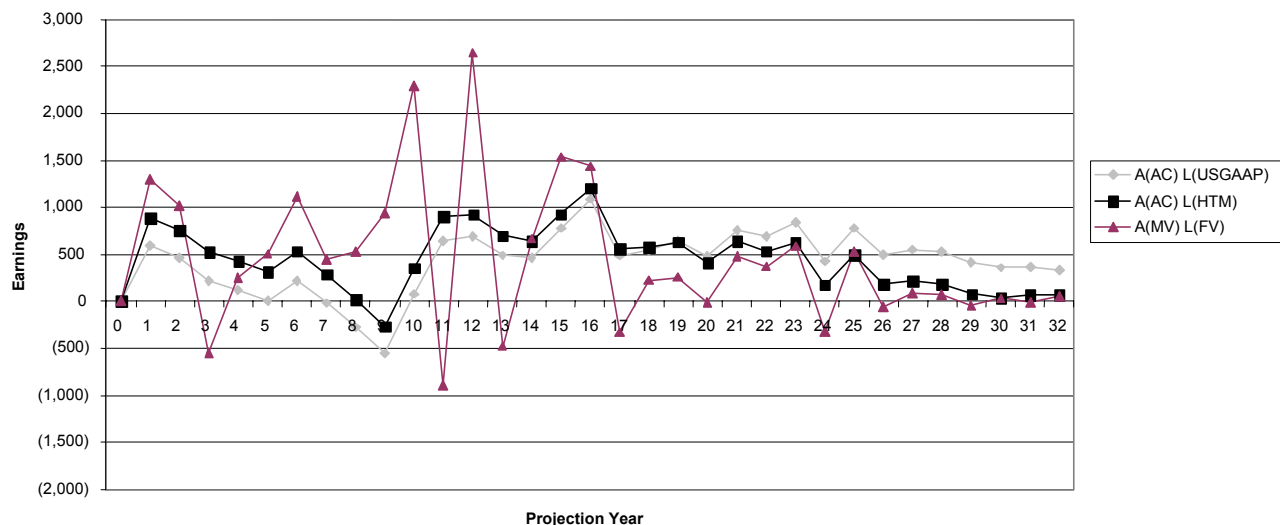


Chart 20 shows earnings for both FV liabilities with FV assets (i.e., consistently measured) as well as earnings for HTM liabilities with AC assets (i.e., also consistently measured) where there is an asset/liability mismatch under the “long bond strategy”. As can be seen, FV earnings are much more volatile than HTM earnings when the yield curve is positively sloped. During the three years when the yield curve was inverted (years 8 to 10) FV earnings and HTM earnings went in opposite directions.

Chart 20 - Similarly Value Assets and Liabilities
Long Bond Strategy
Mortality Experience = Pricing

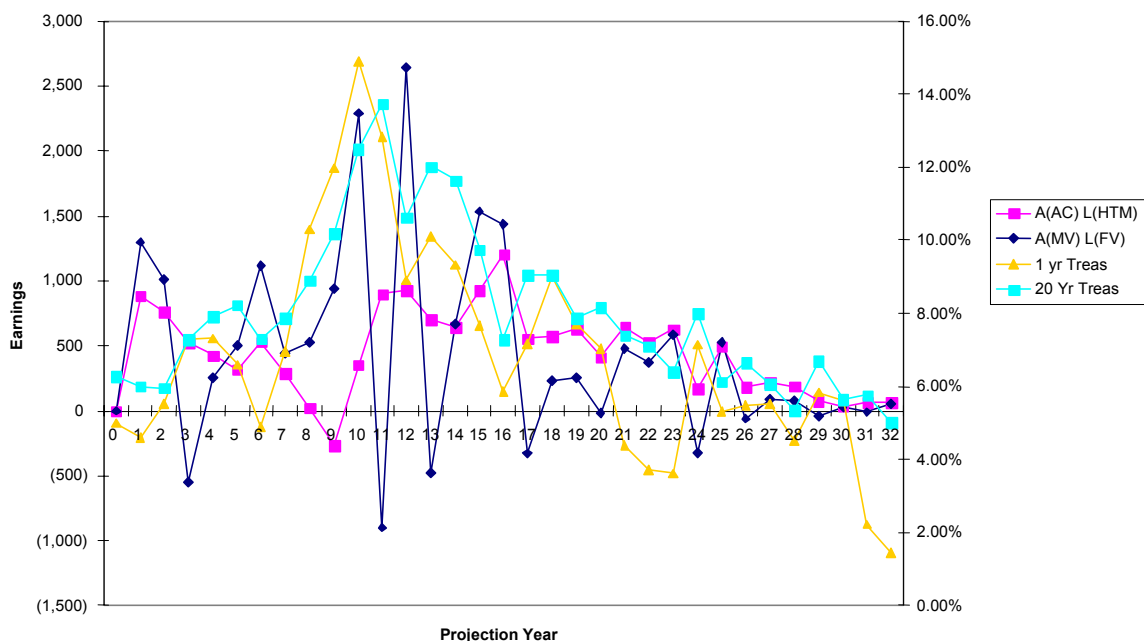
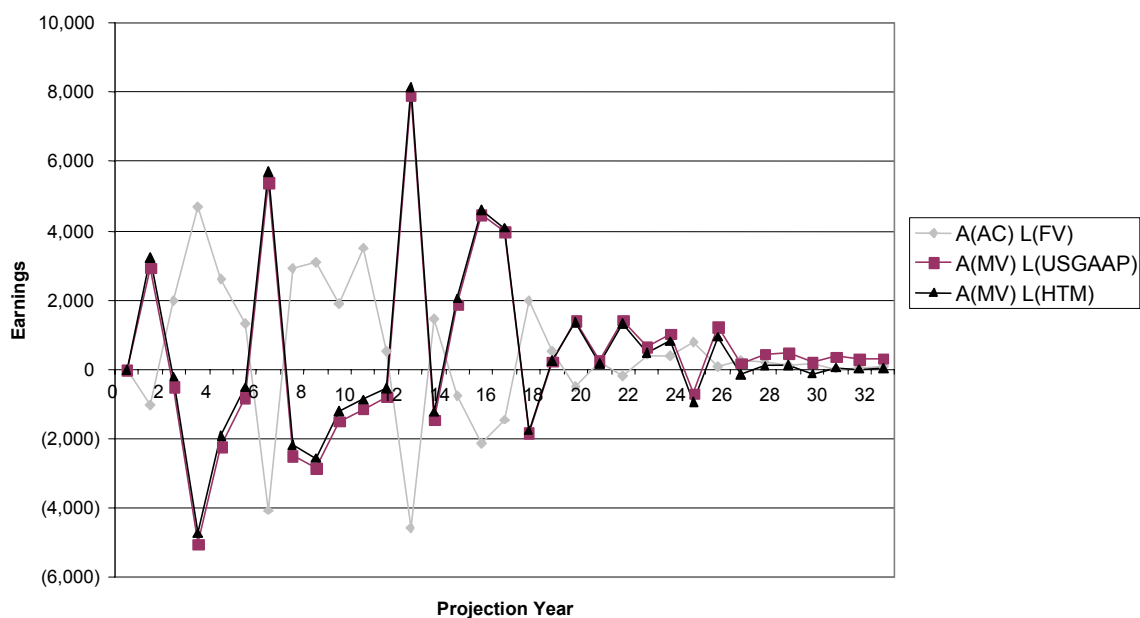


Chart 21 shows again that, when assets are measured using methods that are inconsistent with the methods used to value liabilities, the earnings produced will include spurious volatility. When Chart 21 is compared with Chart 19, it is clear that the inconsistency in asset and liability measurement methods is a more significant driver of the earnings pattern than that produced by the underlying mismatch between the asset and liability cash flow characteristics of the type illustrated when assets “backing” MVMs are not invested according to the underlying MVM distribution by duration. While an insurer could certainly have invested in assets that have expected cash flows that differ completely from the expected liability cash flows, we do not believe that such practices are widespread in economies that have deep and liquid financial markets.

CHART 21 - Dissimilarly Valued Assets & Liabilities

Long Bond Strategy
Mortality Experience = Pricing



G. Implications for Investment Contracts

Based on the initial results for a 20-year annuity certain contract, that is, a long duration pure investment contract that would fall within the measurement standards of IAS 32/39, similar earnings results that do not reflect the underlying business reality occur when the assets and liabilities are measured inconsistently even when the expected liability cash flows closely match the expected asset cash flows. As a result, the IASB might consider in their deliberations on IAS 32/39 the overall results presented here as they affect the measurement of long-duration investment products.

As with the life contingent annuity charts, the annuity certain illustrations include only earnings on assets equal to the fair value liabilities.

Based on this 20-year annuity certain contract, Chart 22 shows similar earnings results for a long-duration investment contract would have occurred when the assets and liabilities are measured consistently, even when the expected liability cash flows tightly match the expected asset cash flows.

CHART 22 - Similarly Valued Assets & Liabilities
Corporate Strips Strategy: Invest cash pro-rata to liability CF
20-year Annuity Certain

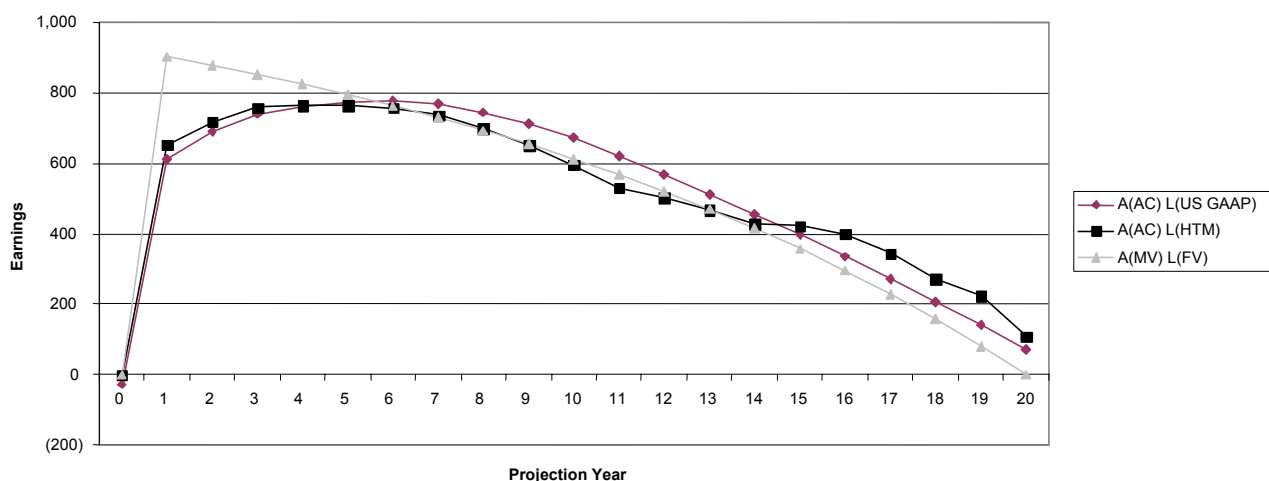
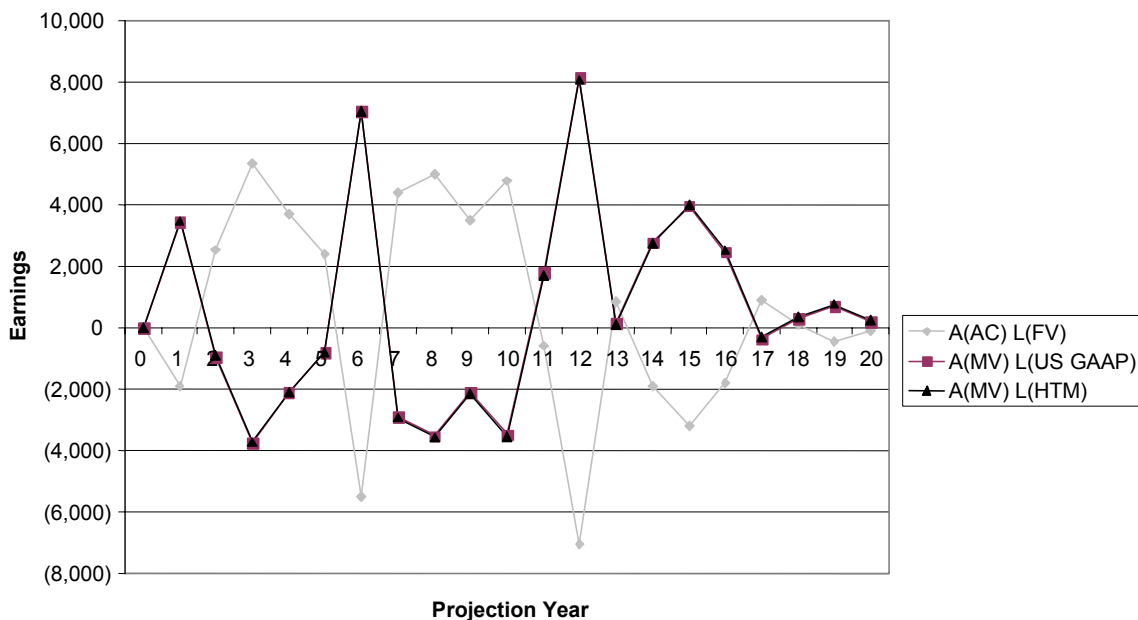


Chart 23 shows that, as expected, dissimilar earnings results would have occurred when the assets and liabilities are not measured consistently. **Once again, the earnings results move in the opposite direction depending on whether it is the assets or the liabilities that are fair valued.**

Chart 23- Dissimilarly Valued Asset & Liabilities

Corporate Strips Strategy: Invest cash pro-rata to liability CF
20-year Annuity Certain



H. Impact On the Financial Condition of the Entity When Artificial Constraints are Imposed On the Measurement of Insurance Contracts

The following charts show the financial effect on the life contingent annuity example of two artificial constraints imposed on the FV and HTM liability methods: (1) the requirement that risk-free discount rates must be used and (2) the restriction that MVMs cannot be negative. When these are imposed, the initial liability without including any MVMs is significantly greater (more than 9% greater) than the initial net proceeds of the contract. This difference results from the fact that these products are priced assuming the issuing entity will earn a return in excess of the risk-free rates. Another way of looking at this issue is that the requirement to use a risk-free essentially ignores the liquidity premium.

As insurance risk exists in this product in the form of mortality (survival of the annuitant), one might expect an MVM to be included in the liability valuation. However, as this product was priced with the expectation of generating a profit and the initial liability (without the inclusion of MVMs) is much larger than the initial net proceeds of the contract, the use of a risk-free discount rate more than compensates for the lack of an MVM. As a result, no MVM is included in the illustration. If one had been included, the resulting liability would be even larger.

CHART 24 - Similarly Valued Assets & Liabilities
Corporate Strips Strategy: Invest cash pro-rata to liability CF
Mortality Experience = Pricing

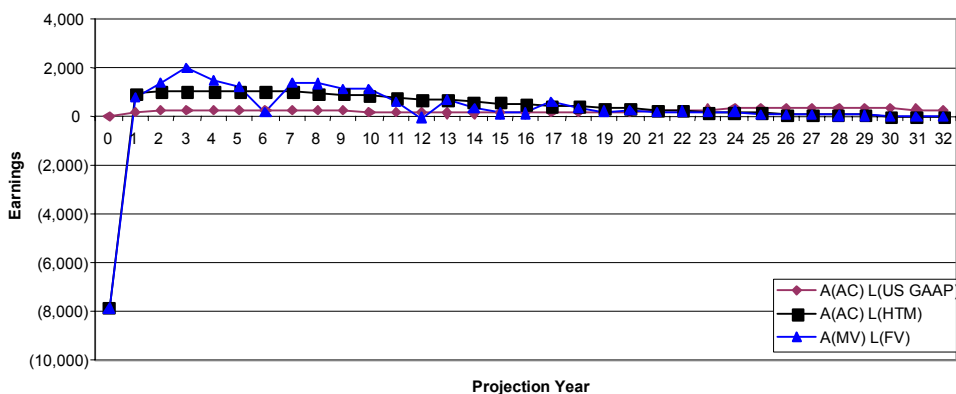


Chart 24 illustrates the income patterns resulting from the application of the three methods when asset and liability cash flows are matched, experience emerges as expected in pricing, and assets and liabilities are valued consistently. Unlike the situation shown in Chart 3 where a corporate bond yield rate was used to discount the liabilities (i.e., the quality of the discount rate was consistent with the quality of the

underlying assets), in this case the income from the FV method does not equal the release of the MVMs. If that were true, FV income would be equal to zero on all years. FV income instead reflects an expected earning of an investment return in excess of the risk free rate in each year, plus the relative impact of changes in the yield curves in that year on the assets and liabilities.

HTM income is greater than was projected with a corporate discount rate, as each year an investment return in excess of the risk free rate is earned. This is reflected in the unwinding of the relative discount rates when cash is invested in zero coupon bonds such as the strips. Changes in yield curves subsequent to issue do not impact these earnings as would be the case if assets are valued at amortized cost and liabilities were valued using HTM as the discount rates are locked in.

CHART 25 - Similarly Valued Assets & Liabilities
Earnings Comparison Years 1-32

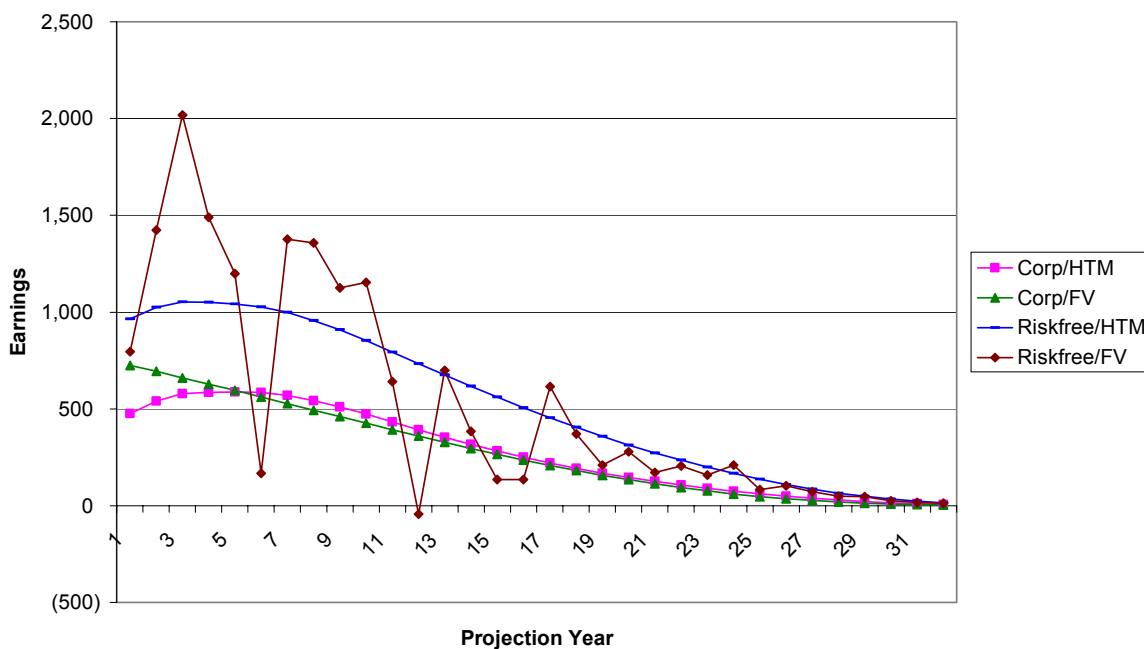


Chart 25 compares the earnings for HTM and FV liability methods when the risk-free rate is applied with no MVMs, compared with the use of a corporate discount rate in conjunction with an MVM. The earnings at issue have been removed from this chart and scaled accordingly so that the pattern of subsequent earnings is easier to discern. Most noticeable is the volatility of the income when liabilities are measured at FV and discount rates are risk-free. While the asset and liability cash flows are well matched in this

scenario, the liability values change in response to changes in the risk-free rates, whereas the asset values change in response to changes in “A” quality corporate yield rates. As the spread between the “A” quality yield rates and the risk-free rates have been assumed to remain constant, both sides of the balance sheet have reacted to the same change in rates. However, as the risk-free rates are 200 basis points lower than the “A” quality yield rates, the change in the liability value for a given change interest rates exceeds the change in asset value for the same change. Thus in years in which the interest rates increase such as in years 3 and 7, earnings increase, as the decrease in the liability value outweighs the increase in asset value. The opposite is true when interest rates decrease, such as in years 6 and 12. If the yield spread were allowed to vary, the volatility could be greater.

Chart 26- Dissimilarly Valued Asset & Liabilities

Corporate Strips Strategy: Invest cash pro-rata to liability CF
Mortality Experience = Pricing

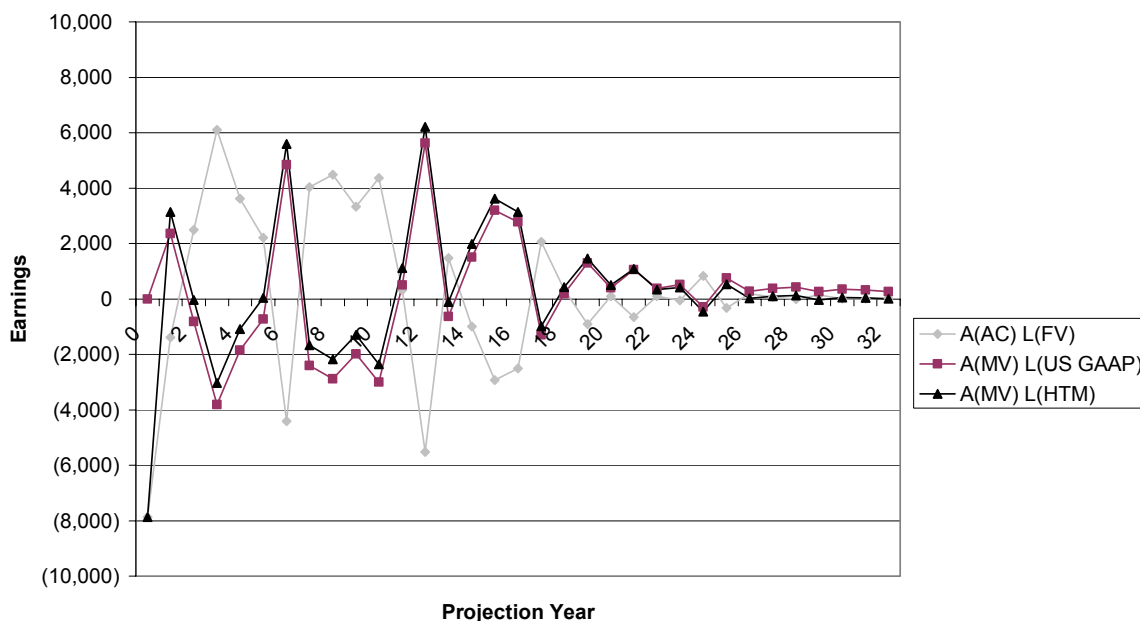


Chart 26 illustrates the income patterns from the three methods when assets and liabilities are not measured consistently and experience unfolds in exactly the same way as was expected in pricing. It is clear from this chart that the inconsistency of asset and liability measurement drives the pattern of earnings, irrespective of the artificial constraints imposed on the liability method applied.

APPENDIX 1

Single Premium Immediate Annuity (SPIA) Model Assumptions

Global Assumptions

All calculations were done on a pre-income tax basis. No income tax has been assumed in the product pricing or in any of the financial illustrations. Although the single premium annuity certain contract assumptions are not separately detailed here, they are identical to those of the SPIA, other than the effect of the life contingencies involved.

Pricing Assumptions

The product was priced to yield a 15% internal rate of return (IRR) on a statutory (regulatory accounting) basis. The profit load is built entirely into the single premium. Below is a summary of the product specifications and pricing assumptions:

Product Specifications		Pricing Assumptions	
Annual Benefit Payment	\$10,000	Survival assumption	1971 IAM table with no mortality improvement or projection scale
Gender of annuitant	Male	Asset earnings rate	8.00% net
		Gross earnings rate	8.38%
		Default rate	-0.35%
		Investment expenses	-0.03%
Issue age:	65	Commission rate	3.0% of gross premium
Issue date	December 31, 1970	Issue expenses	1.5% of gross premium
Policy fee (load)	\$100 at issue only	Maintenance expense	\$5 per year
Premium load (initial expenses plus profit load, to arrive at pricing IRR)	8.24% of premium	Expense per benefit payment	\$2 per payment
		Pricing liability basis	Statutory (71 IAM, 7.0%)
		Risk capital	5% of liabilities
		Pricing IRR objective	15% pre-income tax
		Profit model	Profits released basis

A. Asset Investment and Yield Assumptions

Investment Strategies

Two investment strategies were evaluated:

Investment strategy 1: Invest in corporate bonds with maturities of 10, 20, and 30 years with 50% of available cash flow invested in 10 year bonds, 30% in 20 year bonds and 20% in 30 year bonds.

Investment strategy 2: Invest in a series of corporate bond strips whose expected cash pattern closely matches the expected liability cash flow pattern.

Strips

A strip is a synthetic zero-coupon bond created by selling the rights to each individual cash flow of a coupon-paying bond. A strip's yield can be decomposed from the underlying coupon paying bond. It is equal to the spot interest rate appropriate for the time period until the cash flow takes place. All of the assumptions made for bonds are also applicable to the coupon-paying bond underlying the strip. Any of those assumptions that affect the coupon-paying bond yield (and associated spot rates) will also affect the yield on the strips. For the purposes of this model, strips are assumed to be always available in any amount and any term to maturity.

In all scenarios, reinvestment takes place annually. All bonds are purchased at par. Any negative cash flows are handled by selling a pro-rata share of the existing asset portfolio. Note that selling assets is not consistent with the classification of assets as held-to-maturity that is necessary for valuing assets at amortized cost. While the model has assumed sales of assets necessary to match cash flows, the amount of these sales is small. A more complicated mismatch strategy would be needed to avoid any sales at all. The simplifying assumption is not felt to affect the conclusions reached.

Asset Default Assumption

Defaults are reflected by a reduction to the coupon yield of each bond. The full principle amount is paid without reduction. The annual default assumption is 0.35%. This level default assumption was made to simplify the modeling effort. Defaults are in fact cyclical. However, actual defaults will affect all methods similarly and it is not felt that the simplifying assumption affects the conclusions reached.

Investment Expense Assumption

Investment expenses are reflected by a reduction to the coupon yield of each bond. The annual expense assumption is 0.03%.

Yield Rates

The following simplifications were made to reduce the modeling effort:

- All bonds are assumed to pay annual coupons.
- The yield spread between corporate bonds and risk-free assets is assumed to remain constant throughout time. As can be seen from the charts and rates shown in Appendix 2, this assumption is not consistent with the marketplace. However, it is felt that this simplifying assumption does not alter the conclusions concerning relative earnings among methods.
- Bonds are assumed to exist with terms to maturity beyond the observable yield curve. The yield rates on these bonds were set equal to the rates on the observable bond with the longest maturity.
- Yield rates for bonds with maturities between observable bond yields were linearly interpolated from observable yields.

Asset Valuation Assumptions

Two valuation methods were evaluated.

Amortized Cost: As all bonds were purchased at par, the amortized cost of the bond portfolio of investment strategy 1 is equal to the purchase price of the invested assets on hand plus any outstanding cash balance. The amortized cost of the strip portfolio is equal to the purchase price of the strips on hand plus the amortization of discount from purchase to the valuation date based on the spot yield at purchase.

Market Value: Market value is approximated by discounting all cash flows expected to occur from the current asset portfolio at the spot interest rates corresponding to the corporate bond yield curve that exists at the valuation date.

B. Liability Valuation Assumptions

Fair Value

The FV liability is equal to the present value of future contract cash flows using current best estimate assumptions plus a provision for risk known as the market value margin (MVM). Two methods of calculating the FV liability were modeled. Both set a discount rate and then solve for the MVM that produces no gain or loss at issue, i.e. the initial liability is equal to the net proceeds of the contract at issue. The first method uses a risk-free discount rate. The second method uses a high-grade corporate bond yield discount

rate. The MVM is expressed as a percentage of the risk capital needed to support the risks inherent in the product. The MVM³ is –24.5% of risk capital when a risk-free discount rate is used and +7.8% of risk capital when a high-grade corporate yield discount rate is used. Risk capital is equal to the pricing assumption of 5% of statutory liabilities. It is possible that a negative MVM will not be permitted by the IASB, as it would indicate that a loss exists at issue. However in this case the expected loss (negative MVMs) only results from the required use of risk free rates and does not reflect a true expected loss. Consequently, in the results shown in this report, the high-grade corporate discount rate and a positive MVM were used.

The risk-free rates are set equal to the yield rates on bonds issued by the US Treasury Department, (also referred to as “Treasuries”). Corporate yields were set equal to the yield rates on Treasuries plus a credit spread. The discount rates used in the calculation of fair value are spot interest rates (rates appropriate for discounting a single cash flow) that were decomposed from the yields that existed at each valuation date.

No adjustment has been made to reflect the credit standing of the insurer.

The initial mortality valuation assumption was set equal to the pricing experience assumption.

Held-to-Maturity

The HTM liability is equal to the present value of future contract cash flows using best estimate at issue assumptions, plus a provision for risk known as the market value margin. HTM is very similar to the FV method described above, except that valuation assumptions are locked in at issue subject to a loss recognition test⁴. As with fair valuation, two methods of calculating the HTM liability were modeled. Again the methods set a discount rate and solved for the MVM that produces no gain or loss at issue. The first method uses a risk-free discount rate. The second method uses a high-grade corporate bond yield discount rate. The MVM is expressed as a percentage of the risk capital needed to support the risks inherent in the product. The MVM is –24.5% of risk capital when a risk-free discount rate is used and +7.8% of risk capital when a high-grade corporate yield discount rate is used (see the above section for a discussion of the treatment of the negative MVM). Risk capital is equal to the pricing assumption of 5% of statutory liabilities.

The initial mortality valuation assumption was set equal to the pricing experience assumption.

³ Negative MVMs are a consequence of using risk free rates together with a constraint of a no profit at issue constraint for products expected to be profitable reflecting investment market risk tolerance assumed by insurers.

⁴ Note: In both FV and HTM, the loss recognition criteria and methodology may require additional guidance.



ASSOCIATION ACTUARIELLE INTERNATIONALE
INTERNATIONAL ACTUARIAL ASSOCIATION

US GAAP

The life-contingent SPIA product was valued in accordance with Statement of the Financial Accounting Standards Board (SFAS) No. 60 as modified by SFAS 97 for limited payment contracts. Valuation assumptions for survival and interest rate were set equal to those used in pricing. Provisions for adverse experience deviations (PADs) were included in the survival assumption (a 1% annual improvement in mortality) and in the discount rate (a reduction in the discount rate of 0.23%). This combination of experience assumptions and PADs produce an initial liability that is equal to the net proceeds of the contract. Therefore, no unearned profit liability is needed. A loss recognition test is performed at each valuation date by comparing the carried liability with a gross premium reserve that uses the then current portfolio earnings rate for discounting.

The term-certain SPIA product was valued in accordance with Statement of the Financial Accounting Standards Board (SFAS) No. 91. The valuation interest rate was set such that the initial liability is equal to the net proceeds of the contract. There are no provisions for adverse deviation included in the liability.

Loss Recognition

For purposes of this project, it is assumed that the insurer did not conduct internal credible mortality studies in the period after 1970 and only recognized that its mortality expectations were inadequate when the 1983 industry annuity mortality table was published. While publication of this table may not have had such a dramatic effect in practice, this example is used as a proxy for “new information” becoming available to an insurer that causes future best estimates to be changed to reflect adverse conditions.

APPENDIX 2

Yield Rates

Yields on US Treasury Bonds for Selected Terms to Maturity							
Date	1 year	3 years	5 years	7 years	10 years	20 years	30 years
12/31/1970	5.00%	5.75%	5.95%	6.23%	6.39%	6.28%	**
12/31/1971	4.60%	5.27%	5.69%	5.97%	5.93%	6.00%	**
12/31/1972	5.52%	6.01%	6.16%	6.20%	6.36%	5.96%	**
12/31/1973	7.27%	6.81%	6.80%	6.77%	6.74%	7.29%	**
12/31/1974	7.31%	7.24%	7.31%	7.38%	7.43%	7.91%	**
12/31/1975	6.60%	7.43%	7.76%	7.93%	8.00%	8.23%	**
12/31/1976	4.89%	5.68%	6.10%	6.37%	6.87%	7.30%	**
12/31/1977	6.96%	7.30%	7.48%	7.59%	7.69%	7.87%	7.94%
12/31/1978	10.30%	9.33%	9.08%	9.03%	9.01%	8.90%	8.88%
12/31/1979	11.98%	10.71%	10.42%	10.42%	10.39%	10.18%	10.12%
12/31/1980	14.88%	13.65%	13.25%	13.00%	12.84%	12.49%	12.40%
12/31/1981	12.85%	13.66%	13.60%	13.62%	13.72%	13.73%	13.45%
12/31/1982	8.91%	9.88%	10.22%	10.49%	10.54%	10.62%	10.54%
12/31/1983	10.11%	11.13%	11.54%	11.78%	11.83%	12.02%	11.88%
12/31/1984	9.33%	10.56%	11.07%	11.45%	11.50%	11.64%	11.52%
12/31/1985	7.67%	8.40%	8.73%	9.11%	9.26%	9.75%	9.54%
12/31/1986	5.87%	6.43%	6.67%	6.97%	7.11%	7.28%	7.37%
12/31/1987	7.17%	8.13%	8.45%	8.82%	8.99%	*	9.12%
12/31/1988	8.99%	9.11%	9.09%	9.13%	9.11%	*	9.01%
12/31/1989	7.72%	7.77%	7.75%	7.85%	7.84%	*	7.90%
12/31/1990	7.05%	7.47%	7.73%	8.00%	8.08%	*	8.24%
12/31/1991	4.38%	5.39%	6.19%	6.69%	7.09%	*	7.70%
12/31/1992	3.71%	5.21%	6.08%	6.46%	6.77%	*	7.44%
12/31/1993	3.61%	4.54%	5.15%	5.48%	5.77%	6.40%	6.25%
12/31/1994	7.14%	7.71%	7.78%	7.80%	7.81%	7.99%	7.87%
12/31/1995	5.31%	5.39%	5.51%	5.63%	5.71%	6.12%	6.06%
12/31/1996	5.47%	5.91%	6.07%	6.20%	6.30%	6.65%	6.55%
12/31/1997	5.53%	5.74%	5.77%	5.83%	5.81%	6.07%	5.99%
12/31/1998	4.52%	4.48%	4.45%	4.65%	4.65%	5.36%	5.06%
12/31/1999	5.84%	6.14%	6.19%	6.38%	6.28%	6.69%	6.35%
12/31/2000	5.60%	5.26%	5.17%	5.28%	5.24%	5.64%	5.49%
12/31/2001	2.22%	3.62%	4.39%	4.86%	5.09%	5.76%	5.48%
12/31/2002	1.45%	2.23%	3.03%	3.63%	4.03%	5.01%	5.01%

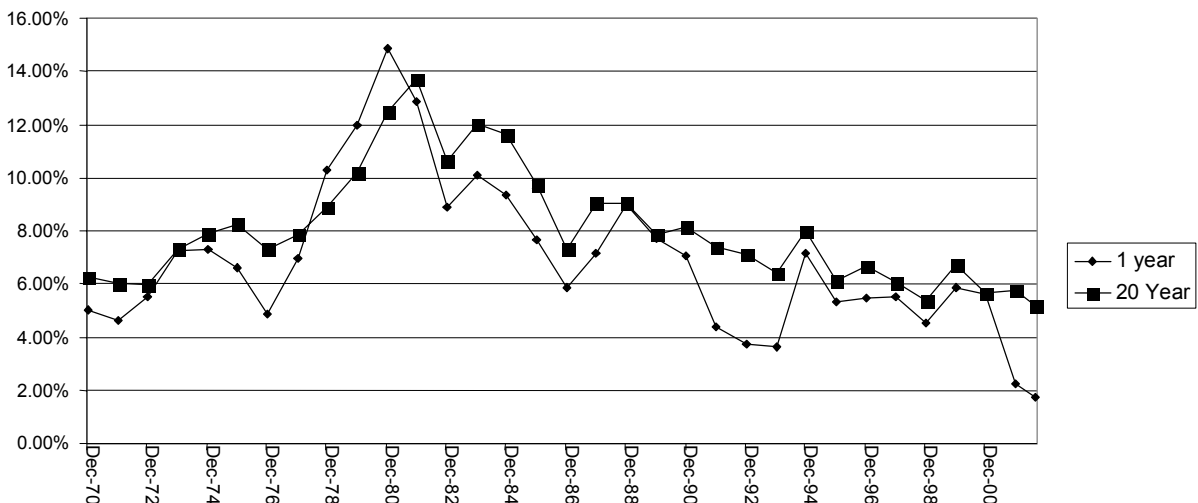
Source: US Federal Reserve

* The 20-year Treasury bond was not issued between January 1987 and September 1993.

** The 30-year Treasury bond was issued starting in February 1977.

Chart 29 compares the yields on the 1-year and 20-year Treasury bonds. This chart gives a rough idea of the changing shape of the Treasury yield curve. In 1970, the yield curve showed a positive slope, i.e. the yields on long-term bonds were higher than the yields on short-term bonds. The yield curve flattened in 1973 and was followed by a steepening of the slope as yields on short-term bonds declined through 1976. Yields on short-term bonds increased dramatically during the late 1970's, culminating in an inverted yield curve, i.e. yields on short-term bonds exceeding yields on long-term bonds. The yield curve reverted to its normal upward slope starting in 1981 and maintained its shape as yields dropped through the mid-1980s. Starting in 1988 the yield curve flattened once again, followed by a period where yields on short-term rates dropped significantly. During the mid- to late-1990s the yield curve was fairly stable and positively sloped. In 2000, the yield curve once again flattened but has steepened since then.

Chart 29 - Short & Long Treasury Yield Rates



The 20-year treasury bond was not issued during the years 1987 through 1992. The values on this chart for those years are linearly interpolated from 10-year and 30-year treasury bond yields.

Chart 30 shows the yield spread over treasuries for “AAA” quality and “BAA” quality publicly traded bonds for the period from January 1969 through January 1987. As this chart shows there has been significant volatility in the spreads over time. The project used a fixed spread over treasuries for all years. While this is not consistent with real data it does not affect the comparison of the earnings of the methods illustrated.

Chart 30 - Corporate Bond Spreads
Spread on Long Term Bonds Over 20yr Treasury Yield
Source: Federal Reserve

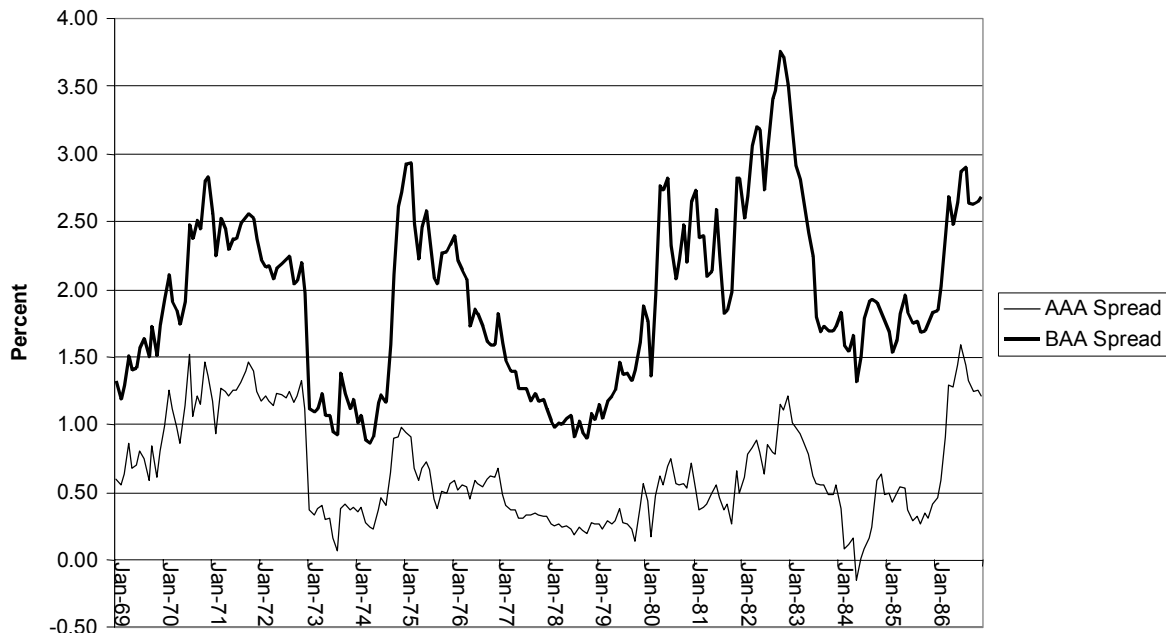
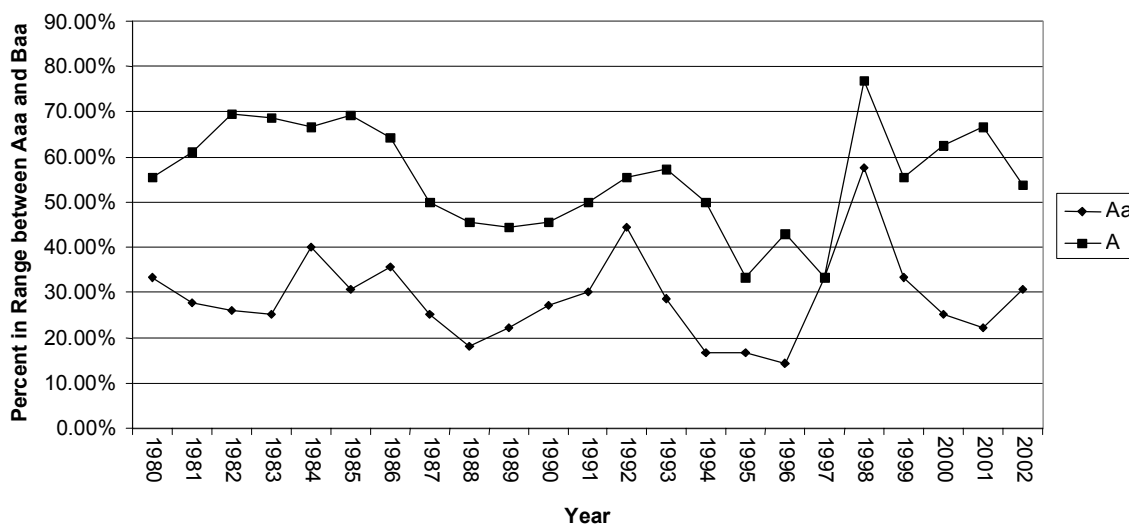


Chart 31 compares the “Aa” quality and “A” quality yield spreads over treasury to the “Aaa” and “Baa” quality yield spreads between 1980 and 2002. It is the “A” quality yield that is approximated in the project. The comparison was made by calculating where in the range between “Aaa” and “Baa” yield spreads the “Aa” and “A” quality yields fell. This shows that the yield spreads for all qualities do not move together over time.

Chart 31 - Spreads in range of Aaa to Baa





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APPENDIX 3

List of Participants

American Council of Life Insurers

Alan Close, CPA	Chairman, Accounting Committee
Jim Renz	Staff Representative
Dave Sandberg, FSA, MAAA	Accounting & Actuarial Committee
Henry Siegel, FSA, MAAA	Actuarial Committee
Steve Strommen, FSA, MAAA	Actuarial Committee

International Actuarial Association

Sam Gutterman, FSA, FCAS, MAAA	Chairman, Insurance Accounting Committee
Paul McCrossan, FSA, FCIA, MAAA	Co-Chairman, Actuarial Standards Sub-Committee
Francis Ruygt	Co-Chairman, Actuarial Standards Sub-Committee
William Hines, FSA, MAAA	Chief researcher
Craig Lewis	Assistant researcher



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INTERNATIONAL ACTUARIAL ASSOCIATION

APPENDIX 4

The following tables show the results used as a basis of the presentation for Chart 3 and Chart 9, Similarly Valued Assets & Liabilities, where experience equals pricing. The tables include information about the three methods examined in this report, US GAAP, IASB Fair Value, and ACLI-HTM.

Assets, Liabilities & Surplus
Experience=Pricing

	<u>Strips, Amort Cost, US GAAP</u>			<u>Strips, MV, Fair Value</u>			<u>Strips, Amort Cost, HTM</u>		
	<u>Assets</u>	<u>Liabilities</u>	<u>Surplus</u>	<u>Assets</u>	<u>Liabilities</u>	<u>Surplus</u>	<u>Assets</u>	<u>Liabilities</u>	<u>Surplus</u>
12/31/ 1970	85,598	85,598	(0)	85,598	85,598	0	85,598	85,598	0
12/31/ 1971	81,877	82,417	(540)	84,052	84,052	0	81,877	82,126	(250)
12/31/ 1972	78,181	79,171	(990)	79,290	79,290	0	78,181	78,584	(403)
12/31/ 1973	74,489	75,865	(1,375)	71,507	71,507	(0)	74,489	74,975	(486)
12/31/ 1974	70,779	72,503	(1,725)	65,661	65,661	0	70,779	71,307	(528)
12/31/ 1975	67,053	69,093	(2,040)	60,925	60,925	0	67,053	67,589	(536)
12/31/ 1976	63,317	65,642	(2,325)	61,761	61,761	0	63,317	63,830	(513)
12/31/ 1977	59,570	62,158	(2,588)	55,350	55,350	0	59,570	60,041	(471)
12/31/ 1978	55,813	58,651	(2,838)	48,459	48,459	0	55,813	56,235	(422)
12/31/ 1979	52,055	55,131	(3,076)	42,495	42,495	0	52,055	52,426	(372)
12/31/ 1980	48,306	51,610	(3,305)	35,538	35,538	(0)	48,306	48,629	(324)
12/31/ 1981	44,577	48,102	(3,525)	32,136	32,136	0	44,577	44,862	(285)
12/31/ 1982	40,888	44,620	(3,732)	33,920	33,920	0	40,888	41,141	(253)
12/31/ 1983	37,259	41,179	(3,920)	29,511	29,511	0	37,259	37,487	(228)
12/31/ 1984	33,712	37,795	(4,083)	27,337	27,337	0	33,712	33,919	(207)
12/31/ 1985	30,268	34,484	(4,217)	26,953	26,953	0	30,268	30,458	(191)
12/31/ 1986	26,948	31,263	(4,315)	26,272	26,272	0	26,948	27,125	(177)
12/31/ 1987	23,774	28,149	(4,375)	21,655	21,655	0	23,774	23,940	(166)
12/31/ 1988	20,764	25,155	(4,390)	18,672	18,672	0	20,764	20,919	(155)
12/31/ 1989	17,936	22,295	(4,359)	16,953	16,953	0	17,936	18,080	(144)
12/31/ 1990	15,304	19,583	(4,279)	14,506	14,506	0	15,304	15,436	(132)
12/31/ 1991	12,880	17,030	(4,150)	12,898	12,898	0	12,880	12,999	(119)
12/31/ 1992	10,674	14,647	(3,972)	10,800	10,800	0	10,674	10,780	(105)
12/31/ 1993	8,695	12,444	(3,749)	9,037	9,037	0	8,695	8,785	(91)
12/31/ 1994	6,946	10,431	(3,484)	6,664	6,664	0	6,946	7,022	(76)
12/31/ 1995	5,430	8,615	(3,185)	5,550	5,550	0	5,430	5,492	(62)
12/31/ 1996	4,143	7,001	(2,858)	4,174	4,174	0	4,143	4,192	(49)
12/31/ 1997	3,077	5,591	(2,514)	3,118	3,118	0	3,077	3,114	(37)
12/31/ 1998	2,218	4,382	(2,164)	2,315	2,315	0	2,218	2,246	(28)
12/31/ 1999	1,548	3,367	(1,819)	1,553	1,553	0	1,548	1,568	(20)
12/31/ 2000	1,043	2,533	(1,490)	1,065	1,065	0	1,043	1,057	(13)



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Income Statement Data
Experience =Pricing

	Strips, Amort Cost, US GAAP					Strips, MV, Fair Value				
	Income	Benefits	Liabilities	Expenses	Net Income	Income	Benefits	Liabilities	Expenses	Net Income
12/31/ 1970	89,639	-	85,580	4,059	(0)	89,639	-	85,580	4,059	0
12/31/ 1971	6,837	9,826	(3,181)	7	185	9,012	9,826	(1,546)	7	725
12/31/ 1972	6,646	9,642	(3,246)	7	243	5,580	9,642	(4,762)	7	693
12/31/ 1973	6,422	9,446	(3,306)	7	276	2,331	9,446	(7,783)	7	661
12/31/ 1974	6,162	9,238	(3,361)	6	279	4,027	9,238	(5,846)	6	628
12/31/ 1975	5,893	9,017	(3,410)	6	279	4,883	9,017	(4,736)	6	595
12/31/ 1976	5,614	8,783	(3,451)	6	277	10,186	8,783	836	6	561
12/31/ 1977	5,321	8,534	(3,484)	6	265	2,656	8,534	(6,411)	6	528
12/31/ 1978	5,012	8,270	(3,507)	6	244	1,880	8,270	(6,890)	6	494
12/31/ 1979	4,698	7,991	(3,520)	6	221	2,492	7,991	(5,964)	6	460
12/31/ 1980	4,378	7,695	(3,521)	5	198	1,169	7,695	(6,958)	5	426
12/31/ 1981	4,053	7,384	(3,508)	5	172	4,379	7,384	(3,402)	5	393
12/31/ 1982	3,732	7,056	(3,482)	5	153	9,205	7,056	1,785	5	360
12/31/ 1983	3,415	6,712	(3,441)	5	140	2,634	6,712	(4,410)	5	327
12/31/ 1984	3,106	6,353	(3,384)	4	133	4,480	6,353	(2,173)	4	296
12/31/ 1985	2,805	5,979	(3,311)	4	132	5,865	5,979	(384)	4	265
12/31/ 1986	2,514	5,593	(3,221)	4	137	5,152	5,593	(681)	4	236
12/31/ 1987	2,234	5,197	(3,115)	4	149	792	5,197	(4,617)	4	208
12/31/ 1988	1,969	4,793	(2,994)	3	166	1,995	4,793	(2,983)	3	182
12/31/ 1989	1,718	4,386	(2,859)	3	188	2,827	4,386	(1,719)	3	157
12/31/ 1990	1,483	3,979	(2,712)	3	214	1,667	3,979	(2,448)	3	134
12/31/ 1991	1,265	3,574	(2,553)	3	242	2,081	3,574	(1,608)	3	113
12/31/ 1992	1,065	3,175	(2,383)	2	271	1,172	3,175	(2,098)	2	93
12/31/ 1993	883	2,784	(2,203)	2	299	1,099	2,784	(1,763)	2	76
12/31/ 1994	719	2,405	(2,013)	2	325	94	2,405	(2,373)	2	61
12/31/ 1995	574	2,042	(1,816)	1	347	977	2,042	(1,114)	1	47
12/31/ 1996	449	1,699	(1,614)	1	363	361	1,699	(1,375)	1	36
12/31/ 1997	343	1,381	(1,410)	1	371	352	1,381	(1,056)	1	27
12/31/ 1998	254	1,093	(1,209)	1	370	310	1,093	(803)	1	19
12/31/ 1999	183	840	(1,015)	1	359	92	840	(762)	1	13
12/31/ 2000	128	624	(834)	0	338	145	624	(488)	0	9

Strips, Amort Cost, HTM

	<u>Income</u>	<u>Benefits</u>	<u>Liabilities</u>	<u>Expenses</u>	<u>Net Income</u>
12/31/ 1970	89,639	-	85,580	4,059	(0)
12/31/ 1971	6,837	9,826	(3,471)	7	475
12/31/ 1972	6,646	9,642	(3,543)	7	540
12/31/ 1973	6,422	9,446	(3,609)	7	578
12/31/ 1974	6,162	9,238	(3,668)	6	585
12/31/ 1975	5,893	9,017	(3,718)	6	588
12/31/ 1976	5,614	8,783	(3,759)	6	584
12/31/ 1977	5,321	8,534	(3,789)	6	570
12/31/ 1978	5,012	8,270	(3,806)	6	542
12/31/ 1979	4,698	7,991	(3,809)	6	510
12/31/ 1980	4,378	7,695	(3,797)	5	474
12/31/ 1981	4,053	7,384	(3,768)	5	432
12/31/ 1982	3,732	7,056	(3,721)	5	391
12/31/ 1983	3,415	6,712	(3,654)	5	353
12/31/ 1984	3,106	6,353	(3,568)	4	316
12/31/ 1985	2,805	5,979	(3,461)	4	282
12/31/ 1986	2,514	5,593	(3,333)	4	250
12/31/ 1987	2,234	5,197	(3,186)	4	220
12/31/ 1988	1,969	4,793	(3,020)	3	192
12/31/ 1989	1,718	4,386	(2,839)	3	168
12/31/ 1990	1,483	3,979	(2,644)	3	145
12/31/ 1991	1,265	3,574	(2,437)	3	126
12/31/ 1992	1,065	3,175	(2,220)	2	107
12/31/ 1993	883	2,784	(1,994)	2	91
12/31/ 1994	719	2,405	(1,763)	2	75
12/31/ 1995	574	2,042	(1,530)	1	61
12/31/ 1996	449	1,699	(1,300)	1	49
12/31/ 1997	343	1,381	(1,078)	1	38
12/31/ 1998	254	1,093	(868)	1	29
12/31/ 1999	183	840	(678)	1	21
12/31/ 2000	128	624	(511)	0	15