

Deferred Tax Treatment of US Statutory Policyholder Liabilities in Life Insurance Companies

Preface

This paper provides a comprehensive view of deferred taxes, both from a theoretical perspective of the concept and from the perspective of the current rules under United States statutory accounting. It also provides a brief comparison of the treatment of deferred taxes under other financial reporting bases. The focus is on deferred tax issues with respect to policyholder liabilities.

This Monograph is a product of the Taxation Section Council of the Society of Actuaries. As a result of the recent high visibility of the statutory deferred tax issue in the United States insurance industry, the Council appointed a task force to write this paper. The task force consists of the following members:

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- American Academy of Actuaries
- American Council of Life Insurers
- The Life Section Committee of the International Actuarial Association
- The Insurance Accounting Committee of the International Actuarial Association

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I. Introduction

Deferred taxes constitute an important element of the financial statements for the insurance industry in many countries. Currently in the United States the accounting bases utilized by the insurance industry include regulatory (“Statutory”) accounting and accounting under Generally Accepted Accounting Principles (“GAAP”). In the European Union, a current accounting model for financial statements is the International Financial Reporting Standards (“IFRS”).

The primary purpose of deferred taxes is to account appropriately in the balance sheet for future taxable income whose incidence is expected to differ from future book income. Insurance company Deferred Tax Assets (“DTAs”) and Deferred Tax Liabilities (“DTLs”) can arise from many different sources, including insurance contracts, invested assets and business combinations. This monograph is not intended to be a treatise on deferred taxes arising from all sources; rather, it is intended to cover deferred tax issues arising from policyholder assets and liabilities, such as reserves, items related to reserves, and other special taxable income issues arising from insurance policies¹.

One of the major drivers of insurance company DTAs in the United States is the difference between regulatory (statutory) reserves and tax basis reserves. Since the reversal of these differences is critical to the level of the DTA and often occurs over many years, this driver is one on which actuaries should focus, for the following reasons:

- Deferred taxes in a company’s balance sheet can be an indicator of the degree to which an organization is making efficient use of capital;
- In those financial systems where the incidence of such future differences affects deferred tax balances (such as in US statutory accounting), actuarial input is an important element of the deferred tax balances; and
- Perhaps most important, an actuary is uniquely qualified to understand these reserve differences and can often take positive steps to influence those balances.

Users of financial statements are arguably much better served if the accounting rules and requirements for the establishment of deferred tax balances are sufficiently close to the theoretically proper approach. A primary purpose of this paper is to provide the life insurance industry and regulatory constituencies with a strong theoretical understanding to help them develop an appropriate and reasonable compromise between theory and practice.

¹ An example in the United States of the latter is the Internal Revenue Code Section 848 deferred acquisition cost capitalization of specified insurance contracts, under which a percentage of premium collections must be capitalized and amortized, often referred to in the life insurance industry as the “Tax DAC”.

II. Historical Background of US Statutory Deferred Tax Treatment

Unlike US statutory accounting, US GAAP accounting for insurance companies has included deferred taxes for many years. The concept of deferred taxes was initially discussed in Accounting Principles Board (“APB”) Opinion No. 11, *Accounting for Income Taxes* (“APB 11”), issued in December 1967.

Statement of Financial Accounting Standards No. 96, *Accounting for Income Taxes* (“SFAS 96”) superseded APB 11 in 1987. The most significant change introduced by SFAS 96 was the change from the deferred method of accounting for income taxes to the liability method. Put differently, while the focus of APB 11 was on the income statement, the focus of SFAS 96 was on the balance sheet. SFAS 96 in turn was superseded in 1992 by Statement of Financial Accounting Standards No. 109, *Accounting for Income Taxes* (“SFAS 109”), which many felt was a more practical approach than under SFAS 96. For a more in-depth discussion of the historical treatment of deferred taxes under US GAAP, please refer to Appendix A, which also compares the treatment of deferred taxes under various financial accounting systems in the US and elsewhere, and gives a fuller history of the historical treatment of deferred taxes under US GAAP.

Under US statutory accounting through year-end 2000, only current tax expense was considered. Beginning at year-end 2001, under codification of US Statutory Accounting Principles², deferred taxes were introduced. Possibly due in part to the newness of the concept and the sense of US regulators that they were dealing with a non-liquid asset, the rules covering the admissibility of DTAs were crafted in such a way as to eliminate entity-specific valuation allowances.³ The resulting “prescribed” valuation allowances (which result from prescribed limits on admitted DTAs) appeared by many to be set at a relatively high level. Consequently, resulting net admitted DTAs tend to omit the predominant portion of future differences between US statutory income and taxable income.

The current statutory rules for calculation of DTAs and DTLs are set out in SSAP No.10.⁴ A mathematical summary of the SSAP No.10 rules covering admissible DTAs can be found in Appendix B. In short, for most life insurers the major limitations on admissibility of DTAs are twofold:

- The marginal tax rate on those temporary differences that reverse within 12 months of the statement date.

² Codification was pursuant to the “Accounting Principles and Procedures Manual”, an annual publication of the NAIC. The primary objectives of the codification project were more complete disclosures, more comparable financial statements for insurers, and a comprehensive guide for use by insurance companies and insurance departments.

³ A valuation allowance as defined under US GAAP accounting, is a reduction in the full force of the tax effect of future tax deductions, for any reason that the company may not enjoy the full tax deductions or tax credit carryovers in the future.

⁴ Statement of Statutory Accounting Principles No. 10, *Income Taxes*, Accounting Practices and Procedures Manual, National Association of Insurance Commissioners (NAIC), 2008.

- 10% of capital and surplus as specified in the prior quarter end statutory statement

Shortly before year-end 2008, the American Council of Life Insurers (“ACLI”) requested that the rules covering admissible DTAs be revised toward what many in the industry would consider to be a more appropriate basis. The ACLI brought its proposal to the National Association of Insurance Commissioners (“NAIC”), but the NAIC did not agree with liberalizing the existing rules for year-end 2008 reporting. An account of those negotiations was written by W. Elwell and published in the May, 2009 issue of *TAXING TIMES*⁵. It is reprinted for the reader’s benefit in Appendix C.

Shortly after those 2008 year-end NAIC negotiations, several states issued “Permitted Practices” to their domiciled companies, enabling them to increase their admissible DTA balances as of year-end 2008, as had been recommended in December 2008 by the NAIC Statutory Accounting Principles Working Group. According to the data compiled by the NAIC:⁶

- For life insurance companies, 11 states granted such “Permitted Practices” to 48 companies, for an increase in capital and surplus of \$3.8 billion.
- For property-casualty companies, 5 states granted such “Permitted Practices” to 17 companies, for an increase in capital and surplus of \$1.4 billion.

This NAIC working group is continuing to review the issues surrounding the DTA concepts, possibly considering a change for year-end 2009 reporting.

III. Theoretical Basis of Deferred Taxes

a. General

⁵ *TAXING TIMES* is the newsletter of the Taxation Section of the Society of Actuaries

⁶ This information includes the following NAIC disclaimer: *"These reports detail the practices permitted for the 2008 Annual Statement Filings and their impact on those filings.*

- *This 2008 Annual Statement data includes all statutory filings and amendments processed by close of business on Tuesday, April 7, 2009, and includes both permitted practices and prescribed practices (with counts for both).*
- *The property/casualty data excludes information on risk retention groups (RRGs).*
- *These sheets were updated weekly in March and were last updated on April 7, 2009. It is believed that the attached reports are fairly comprehensive and these reports will not be updated again.*
- *The data is furnished to the NAIC by third-parties and is provided "AS IS." The NAIC does not guarantee the truth, accuracy, adequacy or completeness of the data."*

This section develops the theoretical analysis of the deferred tax concept. The DTA or DTL consists predominantly of the inventory, as of the statement date, of the future differences between taxable income and book income, multiplied by the tax rate. The difference between book reserves and tax basis reserves is an important and usually significantly material element of such future differences.

In practice some complicating situations may arise, but to best illustrate the concepts of deferred taxes, certain simplifying assumptions have been employed in this section. They are:

- Level future marginal tax rate (35%, the US marginal rate for most large insurers);
- Underlying tax regime based on, but not necessarily identical to, book income (in effect income according to the corresponding financial system); and
- The insurer remains “fully taxable” throughout the future time horizon.

For example, if the book reserve is \$1,000 and the tax reserve is \$900, then the DTA is $35\% * (\$1,000 - \$900) = \$35$. The future taxable income from the tax reserve release will be \$100 less than the book income from the book reserve release. The DTA is thus equal to the future reduction in taxes to be paid as a result of the runoff of this “book to tax” difference. This presupposes the ability to use such assets to reduce income taxes in the future. The balance of this section works with reserve differences only, as an example of how DTAs arise.

Several simplified numerical illustrations follow, which assume a book basis reserve that represents the present value at the statement date of expected pre-tax negative cash flows from the benefit obligations. Additional simplifications or modifications include:

- The change in DTA is presumed to be allowed as a book income statement item, as opposed to current statutory accounting treatment in the U.S. wherein changes in DTAs and DTLs are a direct adjustment to capital and surplus.
- All negative cash flows in the table occur at the end of the year.
- Tax DAC (pursuant to US Internal Revenue Code Section 848) is not treated as a separate item, as it can be embedded as a negative item in the tax reserve component in the illustrations.
- The DTA is fully admissible.

Table 1 illustrates that, if actual negative cash flows are assumed to be 90 percent of the reserve expectations, the resulting post-tax Book Profit (“BP”) will be 65 percent of the pre-tax emerging margin. That is, the column entitled “Ratio” equals Book Profit [post-tax] divided by the difference between actual and expected pre-tax cash flows, and is shown to be a uniform 65%. This table illustrates several other elegant results:

- If the reserve itself is adequate for the next year's obligations, then the reserve less the DTA thereon will also be adequate for those obligations, since the post-tax book profit will equal the pre-tax book profit, multiplied by the complement of the marginal tax rate.
- From an accounting perspective, the actual tax on pre-tax book profit equals the expected tax.
- A pre-tax approach to the statutory reserve calculation, rather than a post-tax approach, is appropriate. That is, statutory reserve calculations, if they are subject to deferred tax treatment, should not include future taxes in expected cash flows.

Formula legends, as applicable, for all tables in the text of this monograph can be found in Appendix D.

Table 1

Pattern of Emergence of Post-Tax Book Profit

Year	Expected	Res. Beg. of Year			DTA Beg. of Yr.	Actual C. Flows	Inv. Inc. on Book Res	Book Profit	Actual - Expected Cash Flows	Ratio
	Pre-Tax Cash Flows*	Book Reserve	Tax Reserve							
1	(100.00)	523.96	445.37	27.51	(90.00)	26.20	6.50	10.00	65.0%	
2	(90.00)	450.16	382.64	23.63	(81.00)	22.51	5.85	9.00	65.0%	
3	(81.00)	382.67	325.27	20.09	(72.90)	19.13	5.26	8.10	65.0%	
4	(72.90)	320.80	272.68	16.84	(65.61)	16.04	4.74	7.29	65.0%	
5	(65.61)	263.94	224.35	13.86	(59.05)	13.20	4.26	6.56	65.0%	
6	(59.05)	211.53	179.80	11.11	(53.14)	10.58	3.84	5.90	65.0%	
7	(53.14)	163.05	138.60	8.56	(47.83)	8.15	3.45	5.31	65.0%	
8	(47.83)	118.06	100.35	6.20	(43.05)	5.90	3.11	4.78	65.0%	
9	(43.05)	76.14	64.72	4.00	(38.74)	3.81	2.80	4.30	65.0%	
10	(38.74)	36.90	31.36	1.94	(34.87)	1.84	2.52	3.87	65.0%	

b. *Relationship of Book Income to “Distributable Earnings” (Considering Required Capital)*

Table 2 takes the same assumptions, except that it assumes an extremely adverse set of values for actual negative cash flows (i.e., 150% of expected) and calculates Required Capital on an after-Federal-Income-Tax (“After-Tax”, “Post-Tax”, or “AFIT”) basis. It illustrates that the Required Capital calculation should be AFIT in order to arrive at a zero value of distributable earnings. Since Required Capital includes future tax cash flows, does not contribute to deferred tax values, and additionally does not constitute a deductible item, the Table 2 DTA is equal to the Table 1 DTA (which is only on the reserve).

Table 2

Required Capital is Exactly Sufficient to Cover Costs Not Provided for in Reserves

Year	Expected	Res. Beg. of Year			DTA Beg. of Yr.	Actual C. Flows	Inv. Inc. on Book Res	Book Profit	Ratio	Required Capital Beg. of Yr.	Release of Req. Cap	Post-Tax Inv. Inc. on Req. Cap	DE
	Pre-Tax Cash Flows (CF's)	Book Reserve	Tax Reserve										
1	(100.00)	523.96	445.37	27.51	(150.00)	26.20	(32.50)	65.0%	183.17	26.55	5.95	0.00	
2	(90.00)	450.16	382.64	23.63	(135.00)	22.51	(29.25)	65.0%	156.62	24.16	5.09	0.00	
3	(81.00)	382.67	325.27	20.09	(121.50)	19.13	(26.33)	65.0%	132.46	22.02	4.31	0.00	
4	(72.90)	320.80	272.68	16.84	(109.35)	16.04	(23.69)	65.0%	110.44	20.10	3.59	0.00	
5	(65.61)	263.94	224.35	13.86	(98.42)	13.20	(21.32)	65.0%	90.34	18.39	2.94	0.00	
6	(59.05)	211.53	179.80	11.11	(88.57)	10.58	(19.19)	65.0%	71.95	16.85	2.34	0.00	
7	(53.14)	163.05	138.60	8.56	(79.72)	8.15	(17.27)	65.0%	55.10	15.48	1.79	0.00	
8	(47.83)	118.06	100.35	6.20	(71.74)	5.90	(15.54)	65.0%	39.62	14.26	1.29	0.00	
9	(43.05)	76.14	64.72	4.00	(64.57)	3.81	(13.99)	65.0%	25.36	13.17	0.82	0.00	
10	(38.74)	36.90	31.36	1.94	(58.11)	1.84	(12.59)	65.0%	12.19	12.19	0.40	0.00	

c. *Adequacy of the Net Book Liability*

As implied above, the deferred tax concept is an accounting concept whose purpose is to establish incremental assets and liabilities arising from certain aspects of future incidence of taxes. That is, the deferred tax concept is not necessarily intended to provide support for adequacy of the balance sheet net liabilities, as adequacy is not an explicit purpose of DTAs or DTLs alone. But for the sake of completeness of the paper, the question should be posed as to whether the balance sheet, net of DTAs or DTLs, is adequate from an economic perspective. That is, in establishing regulatory guidance in this area, there appear to be two objectives:

- Conservatism, to help protect company solvency
- Equally important, usefulness to the user of the statutory statement in fairly reflecting statutory earnings and balance sheets.

To the latter point, if adequacy of the 'reserve less the DTA thereon' can be easily demonstrated in a particular company, this may obviate the need for severe artificial constraints on this element of the total company DTA.

Note the result in Table 1, in which the post-tax BP equals the pre-tax BP multiplied by the complement of the tax rate. This implies that an adequate book reserve allows for an appropriately calculated DTA which, combined with the book reserve, will still show adequacy of the net value (i.e., reserve minus the DTA thereon). See Appendix E for a detailed formula analysis of the adequacy issue.

d. *Discounting the Tax-Effects of Reversals in the Deferred Tax Items*

(1) Technical Analysis of the Effects of Discounting

Discounting future tax effects at interest is the theoretically proper approach to gauging the tax status of a company and obtaining an appropriate comparison of balance sheets between two otherwise identical companies. From a theoretical perspective, it is illogical for a temporary difference reversal of \$1.00 20 years hence to carry the same statement value as one that takes place during the next 12 months. This section of the paper will develop the theoretically correct approach to treating the incidence of future temporary difference reversals in such a way as to determine the appropriateness of alternative practical solutions that have been or could be developed.

Table 1, above, shows the effect of DTAs on BP in an environment that, for simplification purposes, does not use discounting in the deferred tax calculations.⁷ It illustrates, by example, the fact that, if actual pre-tax cash outflows are at 90% of the reserve assumptions

⁷ Non-discounting reflects the current situation. Table 1 is a simplistic illustration for the benefit of the reader. For example, in the calculation of BP, policyholder dividends on traditional life insurance policies and non-guaranteed elements on universal life policies are assumed to be included in cash outflows, and any provision for such cash outflows are assumed to be included in book reserves.

as to those outflows, then BP will be 65% of the resulting 10% emerging pre-tax margin (*i.e.*, 65 % of the difference between actual and assumed cash outflows, the 65% being the complement of the 35% assumed tax rate). Put differently, the effect of the DTA is to make the post-tax BP equal to the pre-tax BP minus the marginal taxes thereon.

One theoretical shortcoming with nondiscounting, which is inherent in the Table 1 calculations, is that unlike for book reserves, the existence of DTAs and DTLs is not assumed to affect the level of required supporting invested assets in the BP calculation process. This is an inappropriate assumption. For reserves, as part of the BP formula, interest is earned on the prior period statutory reserve, due to the fact that the existence of the reserve implies supporting assets that are earning interest. In order to compensate for the nondiscounting of DTAs and DTLs, and realize the elegant result shown in the Table 1 65% ratio, the effect that DTAs and DTLs have on supporting invested assets must be ignored. However, it is obvious that the existence of a DTA reduces the obligation of the company to support the liability side of the balance sheet with invested assets.

In Table 3, below, we see the effects of a theoretically correct, discounted DTA. In this table we can now reflect the appropriate assumption that negative investment income is earned on the DTA at the beginning of the period, inasmuch as the existence of a DTA reduces the required supporting invested assets. Note that, despite the fact that the DTA is now less than it was in Table 1, the stream of resulting BP values remains the same as in Table 1.

Table 3

**Pattern of Emergence of Post-Tax Book Profit
Using Discounted DTAs**

Year	Expected	Res, Beg. of Year		DTA Beg. of Yr.	Actual C.Flows	Inv.Inc. on SR-DTA	Book Profit	Ratio
	Pre-Tax Cash Flows	Book Reserve	Tax Reserve					
1	(100.00)	523.96	445.37	23.64	(90.00)	25.02	6.50	65.0%
2	(90.00)	450.16	382.64	20.54	(81.00)	21.48	5.85	65.0%
3	(81.00)	382.67	325.27	17.66	(72.90)	18.25	5.26	65.0%
4	(72.90)	320.80	272.68	14.99	(65.61)	15.29	4.74	65.0%
5	(65.61)	263.94	224.35	12.49	(59.05)	12.57	4.26	65.0%
6	(59.05)	211.53	179.80	10.14	(53.14)	10.07	3.84	65.0%
7	(53.14)	163.05	138.60	7.93	(47.83)	7.76	3.45	65.0%
8	(47.83)	118.06	100.35	5.82	(43.05)	5.61	3.11	65.0%
9	(43.05)	76.14	64.72	3.81	(38.74)	3.62	2.80	65.0%
10	(38.74)	36.90	31.36	1.88	(34.87)	1.75	2.52	65.0%

(2) Analysis of the Merits of Discounting

Subsection (1), above, is illustrative as a theoretical discussion of discounting, as it demonstrates several concepts which can be expressed as the advantages of incorporating discounting into deferred tax calculations. Those advantages are as follows:

- It generates the theoretically accurate relationship between a reversal in the following year and, for example, a similar reversal 20 years in the future.
- It replicates the real-world situation that required supporting invested assets are affected by the existence of DTAs and DTLs. Related to this is that, if proper recognition is given to this effect, the elegant result is that BP post-tax equals BP pre-tax, multiplied by the complement of the marginal tax rate.
- It facilitates proper comparison between the post-tax balance sheets of companies that, except for the temporary difference reversal pattern, are otherwise identical.
- A DTA that is not discounted assigns too much value to the asset. (Conversely, if a company has net DTLs, nondiscounting errs on the side of conservatism.) Since the overwhelming majority of life insurers contain net DTAs on their balance sheets rather than net DTLs, discounting of DTAs would reduce reported assets for most companies to a more appropriate level.

Disadvantages of discounting include the following:

- The chief disadvantage is complexity. As some might remember, years ago US GAAP guidance [SFAS 96] attempted to force the life insurance industry to post the incidence of deferred taxes by future tax year, for example, over a large number of years, taking into account *for each particular future year* whether there was indeed taxable income in such particular year against which to offset DTA reversals. It ran into significant resistance and was repealed and superseded by SFAS 109. The latter pronouncement simply permitted the establishment of the non-discounted aggregation of future reversals without regard to the actual incidence of such reversals, and netting for an aggregate entity-specific “valuation allowance”⁸ according to the company’s best judgment.
- Not only is discounting complex to calculate; the resulting accuracy may be more apparent than real. Estimation of the incidence of future reversals accurately over a long time horizon is subject to a substantial degree of potential error, let alone the potential error in estimating the ability of a DTA reversal to be offset against taxable income for any particular future year. Reintroducing this practice could potentially spawn a whole new set of regulatory rules to provide guidance on the assumptions as to the particulars of each future tax year over the material future time horizon. For example, to estimate the incidence of future changes in tax reserves and statutory reserves, and the incidence of other taxable income (and tax losses) is highly assumptions-dependent and entity-specific.

⁸ A “valuation allowance” arises under US GAAP due to the fact that gross DTAs and gross DTLs are arrived at by the company, with no arbitrary prescribed limitation under US GAAP guidance. On the contrary, each company is required to arrive at its own estimate (i.e., a “valuation allowance”) for the reduction in any gross DTA, to provide for a probable portion of that gross DTA that may not be available to the company in the future to actually reduce income taxes.

- The discount rate to be used is additionally highly assumptions-dependent and arguably entity-specific. Controversy can develop over total returns versus base returns, capital gains and losses versus ordinary income and losses, incorporation of incidence of the Interest Maintenance Reserve, etc.

In sum, the theoretical extra value from discounting may be questionable relative to the resource requirement, compared to a reasonable pragmatic approach that would implicitly allow for the discounting effect. But the precept remains that any pragmatic solution should bear in mind the theoretically accurate approach from which it is deviating.⁹

IV. Critical Analysis of Current US Statutory Guidance

a. Benefits of Improving the DTA Recognition Standards to More Closely Resemble Reality

Allowing for full DTA admissibility, where economically warranted, would certainly tend to make statutory balance sheets clearer to the users. Eliminating the differences created by significant regulatory constraints would facilitate comparisons between companies. Such constraints can affect different companies to different extents, thus having an uneven impact across the industry.

From a valuation allowance perspective, when it is *more likely than not* that sufficient future taxable income will be available to allow a previously unrecognized future income tax benefit to be realized, the DTA should be permitted to the extent that there is taxable income. By the same token, a significant weakening of a company's financial position may indicate that the enterprise will not be able to generate sufficient taxable income to allow for the realization of the previously recorded future tax benefit. In this latter case the DTA would be reduced to the amount that is considered *more likely than not* to be realized, and a relevant question is one of how best to go about determining a prescribed formula to approximate an appropriate valuation allowance.

b. Regulatory Concerns and Potential Responses

Any regulatory alternative, presumably must address the possibility that other future taxable income might not be available to take advantage of those future reversals of DTAs. Additionally, some regulators perceive that a DTA is a non-liquid asset. This issue will be further explored in Sections IV and V. The current regulatory structure appears to have addressed this by using a prescribed implicit valuation allowance in the DTA formula, as

⁹ However, as can be noted in Appendix A with respect to Canadian practice, generation of a discounted DTA with respect to policyholder liabilities alone is generally not an insurmountable task. In the US, for example, the required data can be made available through the Actuarial Opinion and Memorandum Regulation requirements.

opposed to an allowance subject to individual judgment. See the discussions of Statement of Statutory Accounting Principles No. 10, *Income Taxes* (“SSAP No. 10”) in Appendices B and C.

Section V explores whether a longer horizon, such as three years or five years, would be sufficient to implicitly generate a reasonable and practical prescribed valuation allowance that would cover most situations, and therefore, be acceptable as sufficiently conservative to the regulators. Demonstration of a resulting margin for such an expanded limitation will be made below. Moreover, given, for example, the life insurance company 15-year carryforward limit currently in the Internal Revenue Code, it would be highly unlikely, except in the circumstances of a possible bankruptcy, for a future reversal to go unused. It is additionally the purpose of Required Capital to mitigate against the possibility of bankruptcy. At the same time, it does not guarantee absolutely, that there would be sufficient taxable income in any particular future year to be able to fully use a DTA.

As to the non-liquid asset issue, for property-casualty product lines with short claim tails, liquidity is vitally important, as it translates into current claims-paying ability. However, in the life insurance environment, asset adequacy is the more relevant term. In general, invested assets can be liquidated to provide cash, while the important question is –“Are sufficient assets on hand to support the company’s long-term obligations to its policyholders?” Put differently, in the life insurance environment, as long as invested assets can be converted into cash, liquidity is not a significant issue if asset adequacy is demonstrated. That is, for example, if invested assets equal to the net policy statutory liability (statutory reserve less DTA thereon) are sufficient, together with future investment income plus future premiums, to provide for future benefits, expenses, and taxes, then asset adequacy is demonstrated.

c. Discussion of Shortcomings of the Current Statutory Standard in SSAP 10

There are several significant shortcomings in the current general standards relative to the theoretically correct approach, at least under US statutory accounting (and, to some extent, under IFRS). Those shortcomings are listed below:

- 1) Arguably the most severe shortcoming, at least in terms of the difference in results, is that under SSAP 10 the required approach to generate net admissible deferred tax assets tends to omit from recognition the major portion of future likely tax deductions. The two most significant limitations, unique to statutory accounting, are:
 - The limitation to temporary differences that reverse over the next twelve months from the annual statement date. This one-year limitation is significantly shorter than the 3-year carryback period available under the Internal Revenue Code, so that, if, for example, there is a future temporary difference reversal in the second year after the statement date, there is the availability under the deferred tax premise, to carry it back to a known prior tax year.

- The limitation of the DTA to 10% of the most recently reported statutory capital and surplus prior to the statement date.

Considering that the major temporary differences driving DTAs in the life insurance environment normally take ten to twenty years to completely reverse, for most companies the net admissible DTA is severely constrained to include only those differences that reverse within twelve months of the statement date. One result of the current statutory requirement is that comparability of post-tax surplus between companies is at best suboptimal. This is best illustrated by a theoretical comparison of two companies. Company A has \$100 of statutory reserves and \$100 of tax reserves. Company B has \$95 of tax reserves but is otherwise identical to Company A. Company B will have \$5.00 less future taxable income than Company A. Thus, at a 35% tax rate Company B should theoretically be holding a \$1.75 DTA with respect to this item. On the contrary, it would only be holding a small fraction of that \$1.75, since it can only recognize the reversals that take place over the next year.

SSAP No. 10 precludes individual company judgment by not adopting the entity-specific “valuation allowance” concept present in US GAAP accounting (SFAS 109). Rather, the statutory direction has been toward the above-cited, *prescribed* uniform “proxy” valuation allowance. This guidance arguably serves three purposes: the proxy valuation allowance, a provision for an “in lieu of” discount rate, and a provision for uncertainty.

Companies with proven track records of strong earnings history are unduly penalized by the “one-year reversal” rule. The currently non-admitted portion of the DTA will, *more likely than not*, generate a future economic benefit. In addition, it is controlled by the company, therefore meeting all the characteristics of an asset. Company balance sheets are arbitrarily impaired by this limit on the DTA. This is likely one of the reasons why “many insurers -- including Allstate, Hartford, Lincoln, Nationwide, Northwestern, Principal Financial Group Inc., and US units of Aviva PLC and ING Groep NV -- won permission for more-generous treatment of DTAs in calculating their capital” at year-end 2008.¹⁰

- 2) Deferred taxes are not being discounted at interest. Thus a taxable income item 20 years hence is given the same relative value as one scheduled to occur within 12 months of the statement date. This issue is elaborated on above, in Section III.d.
- 3) Under US statutory accounting, the Model Actuarial Opinion and Memorandum Regulation (“AOMR”) requires that Asset Adequacy Testing Excess Reserves (“AAT Excess Reserves”) be calculated post-tax, despite the fact that, as statutory reserves, AAT Excess Reserves would be required to generate DTAs¹¹ under the current SSAP No.10 requirements. This requirement distorts the relationship

¹⁰ *The Wall Street Journal*, March 1, 2009.

¹¹ It is generally felt by tax actuarial practitioners that the AAT reserves, and thus the excess of AAT reserves over legacy reserves are not deductible. Thus the entire excess would end up feeding deferred tax assets.

between pre-tax and post-tax income. This situation could be an “accident of history”, since AAT Excess Reserves became required approximately 10 years prior to US statutory deferred tax requirements.¹² The AAT Excess reserve calculation requirement was not changed when deferred taxes became a recognizable item, and we now have a mathematically inconsistent result. There are two possible remedies to this inconsistency: either make the AAT reserve pre-tax or exempt the AAT Excess Reserve from a DTA requirement. The latter is preferred, for two reasons:

- The difficulty of estimating the incidence of future AAT Excess Reserve changes.
 - Possibly more important, under Alternative 3 in Section V below, an economic reserve should be calculated post-tax, in order to compare appropriately with the formula [pre-tax] reserve less the DTA thereon.
- 4) Although currently viewed more as a balance sheet item, limitations on deferred tax expense recognition distort US statutory income statements. The resulting distortion may prevent comparability among companies and between different valuation years.

For US GAAP accounting, under FAS 109 changes in DTAs and DTLs are included in income tax or benefit in GAAP earnings. Under current statutory accounting, changes in DTAs and DTLs are recognized as a separate component of gains and losses in the surplus account, as opposed to going through statutory earnings.

Table 4, below, which is built on Table 1, illustrates the impact on statutory book profit (“Stat BP”) due to the requirements on this placement of the change in DTA. The consequence of this change is a distortion of Stat BP.

¹² Statutory deferred taxes were introduced with codification beginning in 2001, via SSAP No. 10.

Table 4

Year	Table 1 Stat BP*	Change DTA	Stat BP Ignoring ch DTA
1	6.50	(3.87)	10.37
2	5.85	(3.54)	9.39
3	5.27	(3.25)	8.52
4	4.74	(2.99)	7.73
5	4.26	(2.75)	7.01
6	3.84	(2.54)	6.38
7	3.45	(2.36)	5.81
8	3.11	(2.20)	5.31
9	2.80	(2.06)	4.86
10	2.52	(1.94)	4.46

* Net of Change in DTA

Non-recognition of the change in DTA in statutory income, as well as limited recognition due to conservative admissibility requirements, have the same effect. The establishment of the DTA at issue provides surplus, but omitting or limiting the erosion of this asset through the income statement distorts statutory income and limits comparability between companies.

V. **Alternative Solutions for Improving the US Statutory Deferred Tax Reporting Requirements**

a. *Suggested Improvement in Determining the Admitted Component of Deferred Tax Assets*

This subsection discusses various alternatives to the current US statutory deferred tax requirements, to render them closer to the theoretically correct approach. Some of the alternatives mentioned below suggest more appropriate criteria for the objectives being sought than the current two-pronged measure of “percentage of capital and surplus” and “number of years” limit in Paragraph 10b of SSAP No. 10. Moreover, it is highly probable that, rather than using a single one of the alternatives below, a reasonable solution might be to use a combination of criteria, and allow for the lesser (or least) of two (or more) thresholds, although that would complicate the calculations.

Alternative No. 1: Expansion of “Number of Years” Limitation

Such expansion would be limited so as to allow for the following:

- “In lieu of” discounting;

- Known valuation allowance issues; and
- Uncertainty.

Given that Table 3 illustrates the theoretically correct result and perhaps a typical one (*i.e.*, the discounting of DTAs and the adjustment of investment income for the DTA effect), in this monograph we could have conceivably performed multiple calculations over various scenarios of temporary difference reversals in order to test the feasibility of certain pragmatic approximations to that theoretically correct approach.

Table 5 shows one example of the comparison of undiscounted versus discounted DTAs, from Tables 1 and 3 respectively.

Table 5
For Tax-statutory ratio of 85%

Year	DTA Beginning of Yr		Effect of Discounting
	Undiscounted	Discounted	
1	27.51	23.64	3.86
2	23.63	20.54	3.10
3	20.09	17.66	2.43
4	16.84	14.99	1.85
5	13.86	12.49	1.37
6	11.11	10.14	0.96
7	8.56	7.93	0.63
8	6.20	5.82	0.37
9	4.00	3.81	0.18
10	1.94	1.88	0.06

As can be seen from this exhibit, the \$3.86 effect of discounting is relatively slight under this illustration. For example, it is evident by inspection that, at the beginning of the time horizon, one could extend the current 12-month limit on countable reversals to as much as three to five years and still provide a significant margin over the difference between discounted and undiscounted DTAs. Even a five-year limit would provide for a discounting plus a significant prescribed valuation allowance “margin” for possible non-usability of those future reversals.

To demonstrate the above-cited margin, the next eight years of reversals provides a give-up of future reversals of 4.00 (the ninth year DTA), *i.e.*, in excess of the 3.86 effect of discounting. If the prescribed limit were to be reduced to five years, then a give-up of 11.11 would exist to cover the above 3.86 first-year effect of discounting, with a net remaining prescribed valuation allowance margin of 7.25 (*i.e.*, 11.11 – 3.86) to make provision for the possibility of non-usability of the future reversals and the uncertainty involved.

As an additional demonstration of the conservatism inherent in a three- to five- year limitation, Appendix F illustrates the reversal pattern for an immediate annuity. Immediate annuities reflect the case where the reversal period is very long. Take for example the case of a single premium immediate annuity issued in 1990, where the applicable Federal interest rate (“AFIR”) was 8.37%, while the prevailing statutory assumed interest rate was

8.25%. In this case even a 10-year threshold is quite conservative compared to full utilization of the DTA. Under the Appendix F fact pattern the discounted DTA is .0237 per \$1.00 of annual income, while a 10-year threshold provides only a .0112 DTA. Thus, for that product type the three- to five- year threshold is even more conservative.

We suspect that other sample temporary difference reversal scenarios would not make a sufficient difference to alter the preliminary conclusion that allowance of up to five years of temporary difference might be practical and a more suitable result. Five years was selected as a prescribed limit for purposes of this discussion, given the increased uncertainty of the other assumptions as one extends this limitation to a greater number of future years. Such uncertainties include future taxable income patterns and their ability to absorb future DTA reversals. It is our opinion that for most life insurance companies a five-year limitation would still generate a conservative result in most cases.

It would appear that the conclusion would not change significantly if the initial “tax reserve to statutory reserve” ratio were to be significantly different.

In sum, the pattern of future temporary difference reversals could vary depending on many factors. However, the above analysis certainly indicates that a three-year or five-year threshold is reasonably consistent with the regulators’ objectives, whereas reversals of reserve differences and section 848 (Tax DAC) elements¹³ typically take place over the next 10 to 40 years.

Alternative No. 2: Percentage of Future Reversals

This alternative would make use of patterns from the AOMR Data. From a regulatory perspective, the current AOMR output could be expanded to print out the pattern of reversals of the following:

- (1) Tax DAC;
- (2) Statutory reserve; and
- (3) Tax reserve.

Here the threshold could be, for example, 50% of the temporary differences for gross DTAs, and 100% for gross DTLs. An argument for this alternative would be that it would align far more closely than Alternative No. 1 with an individual company’s pattern of reversals. This alternative would improve comparability between companies. A major shortcoming of the one-year reversal limit is that it can affect different companies very differently, depending on their mix of business.

Alternative No. 3: Asset Adequacy Floor

¹³ Code Section 848 refers to the Internal Revenue Code section, under which a company must capitalize a percentage of premiums collected for certain major product lines and amortize the result over 10 years in a straight-line manner.

As suggested in Alternative No. 2, above, the economic reserve (as defined in Appendix E) is now available under the AOMR in most life insurance companies. It is now quite feasible to compare quantity (1) to quantity (2), as follows:

- (1) Statutory reserve minus the DTA applicable to the product line.¹⁴
- (2) The economic reserve, calculated post-tax, as some function (such as some average) of AOMR results.

The excess of (1) over (2) would be the gross "margin". The gross margin would provide evidence that such "net reserve" is sufficient to provide for future benefits, expenses, and taxes. The "net margin" could be the greater of the above margin or a conservatism factor applied to (2) (or applied to the statutory reserve for the lines of business, if (2) is not separable by line of business). The admitted DTA with respect to policyholder liabilities would be the full DTA, but limited such that (1) - (2) above is floored at the net margin. Similarly to the approach used in the US Risk Based Capital formulae (by and large), this conservatism factor could vary by line of business such that a higher factor would apply to more volatile product lines. For example, noncancellable individual disability income would require a higher such factor than term life insurance due to different risk profiles.

Use of this asset adequacy approach could provide a reasonable response to regulatory concerns about the non-liquid asset issue. It is possible that the "1-year reversal" limitation on DTA admissibility was developed with liquidity concerns in mind. However, liquidity and asset adequacy are certainly not synonymous. For life insurance liabilities in general, given the requirement that invested assets be predominantly liquid assets, asset adequacy is far more relevant than asset-specific liquidity in assessing the financial viability of life insurers, as indicated in Section IV, above. If the limit on the DTA is such that asset adequacy is demonstrated and a reasonable margin provided, this should give the appropriate comfort to the regulators.

The comparison of the statutory formula reserve and related items minus the DTA thereon to an economic reserve is not really a new concept in financial reporting. Under GAAP, loss recognition testing is performed by comparing the "net GAAP liability" (benefit reserve less deferred acquisition cost, and possibly plus or minus certain other related GAAP asset and liability balances) against a gross premium valuation ("GPV")¹⁵. If the "net GAAP liability" is less than the GPV, a premium deficiency is required to be established.

It is recognized that the Internal Revenue Code, section 848, requires the capitalization of deferred acquisition costs (Tax DAC). The Tax DAC can be treated as simply a negative component of the tax reserve from a mathematical structure perspective, and its DTA can be included in such analysis.

¹⁴ The "DTA applicable" would be prior to any reduction for nonadmissibility. In addition to reserve differences, the section 848 Tax DAC would be taken into consideration.

¹⁵ A gross premium valuation from a US GAAP perspective equals the present value of benefits plus related expenses minus gross premiums, using actual plus anticipated experience. Ref. SFAS No. 60, Parags 35 and 36. All such values are pre-tax under US GAAP.

To make this alternative really viable, we note above that under the Actuarial Opinion and Memorandum the AAT Excess Reserve is post-tax, and therefore, does not merit the generation of any DTA thereon, despite the fact that such a reserve is generally not taken as a deductible reserve. This renders the full AAT Reserve quite appropriate as an economic reserve under (2) above to test against (1), above. As indicated in Section IV, a conforming change to SSAP No. 10 would be needed, to add such AAT Excess Reserve to the list of balance sheet items that are exempt from establishment of DTAs (*i.e.*, included with Goodwill, Interest Maintenance Reserve, etc.).

b. Suggested Improvements in the Required Annual Statement Presentation

As indicated above, the change in DTLs and net admitted DTAs is currently required to be credited or charged directly to capital and surplus (via the Surplus Account), as opposed to forming a part of statutory earnings (Summary of Operations). It is the opinion of the authors that this treatment is suboptimal and distortive of earnings. It especially distorts the comparability of statutory earnings between companies. Thus, there needs to be at least a component of DTA/DTL change in the Summary of Operations. The following is recommended:

- That the period change in the net statement DTL be put completely through the Summary of Operations;
- That the period change in the net statement DTA prior to subtracting for non-admitted DTA be put completely through the Summary of Operations; and
- That the change in the non-admitted DTA be put through the Surplus Account, as one additional item of change in non-admitted assets.

This structural change would bring treatment of DTAs more into conformity with the treatment of other non-admitted assets in the US statutory annual statement.

VI. Conclusion

It is recognized that, in coming up with a viable approach to deferred tax treatment in the US statutory environment for life insurance companies, the practical must be balanced with the theoretical, bearing in mind both the necessarily conservative nature of the product and the usefulness to the audiences. It is hoped that this paper has served the purposes of moving this important subject forward.

Appendix A – Deferred Tax Treatment in Financial Models Other than US Statutory Accounting

Section II and Appendix B discuss the historical and current treatment of deferred taxes under US statutory accounting, while Section III focuses on the theoretically correct approach to recognize DTA. This Appendix will discuss practical approaches recently and/or currently in effect for DTA/DTL treatment under three other financial models: US GAAP, International Financial Reporting Standards (“IFRS”), and Canadian GAAP & statutory.

a. US GAAP

Determination of US accounting principles is primarily the responsibility of the accounting profession. The concept of deferred taxes was initially discussed in Accounting Principles Board (“APB”) Opinion No. 11, *Accounting for Income Taxes* (“APB 11”), which was issued in December 1967. The APB was created in 1959 as the former authoritative body of the AICPA¹⁶ for accounting principles. During its tenure, the APB issued 31 opinions and four statements regarding significant accounting principles until 1973 when it was replaced by the Financial Accounting Standards Board (“FASB”). Although many of the APB opinions have been superseded by subsequent FASB pronouncements, 19 opinions still remain as part of GAAP.

In 1972 the AICPA, with the cooperation of insurance company accountants and actuaries developed “Audits of Stock Life Insurance Companies (“Audit Guide”), to summarize the applicable accounting and auditing requirements for stock life insurance companies. The Audit Guide has been periodically updated by the AICPA to include accounting and auditing issues for both life and health insurance entities.

Since 1973, the FASB has been the designated organization in the private sector for establishing the principles and standards of financial accounting. It does so through the promulgation of Statements of Financial Accounting Standards (“SFAS”). Those standards govern the preparation of financial statements, and they are officially recognized as being authoritative by the Securities and Exchange Commission (“SEC”) and the AICPA.

In 1982, the FASB initiated a project to address growing criticism of the existing accounting and reporting practices for income taxes under APB 11 and the other related accounting pronouncements. Critics of the APB 11 approach stated it was inconsistent, difficult to apply, and that the rules, which were developed on a piecemeal basis, were in conflict with the FASB conceptual framework. In response to those criticisms, the FASB developed a new approach to accounting for income taxes and in December 1987 it issued FASB Statement 96 (“FAS 96”). FAS 96 was intended to replace substantially all prior pronouncements on accounting for income taxes, and it specifically superseded APB 11.

¹⁶ American Institute of Certified Public Accountants.

The most significant change introduced by FAS 96 was the change from the deferred method of accounting for income taxes to the liability method. A fundamental difference between the liability method and the deferred method is that the deferred tax balances are adjusted currently to recognize the effects of changes in tax law, including rate changes. The liability method under FAS 96 required applying a strict formula approach, which presented significant hurdles to recognizing expected future tax benefits as DTAs. Put differently, while the APB 11 approach had an income statement focus, the FAS 96 approach had a balance sheet focus.

Many companies that adopted FAS 96 discovered that its implementation was extremely complex and time consuming. In addition, the results were often counter-intuitive and difficult to explain. In March 1989, the FASB began to consider the numerous requests to amend FAS 96. Many requests for amendment were rejected; however, the FASB did agree to consider the overly restrictive criteria for recognition of DTAs and the complexities related to its implementation. To provide more time for the FASB to reconsider the restrictive approach to deferred taxes under FAS 96, its effective date was delayed three times.

In February 1992, the FASB issued Statement 109 (“FAS 109”), *Accounting for Income Taxes*, which was effective for fiscal years beginning after December 15, 1992. The current financial accounting and reporting standards for the effects of income taxes during the current and preceding years were established in FAS 109, which amended and superseded FAS 96, and all other accounting pronouncements with respect to income taxes. Although FAS 109 retains many of the provisions of FAS 96, principally the liability method, the rules for recognition and measurement of DTAs were changed dramatically. Unlike FAS 96, FAS 109 does not give major focus on the future incidence of the GAAP versus tax basis differences, thus removing a major complication inherent in FAS 96.

Under FAS 109, the ability to consider future taxable income to support the recognition of DTAs was incorporated into the basic recognition and measurement model. In effect, DTAs are recognized for deductible temporary differences; however, they are reduced by an entity-specific valuation allowance if it is *more likely than not* (greater than 50 percent) that some or all, of the DTA will not be realized.

The primary objectives for FAS 109 are: to recognize the amount of taxes payable or refundable for the current year and to determine DTAs and DTLs for the future tax consequences of events that have been recognized in an enterprise’s financial statements or income tax returns. These objectives are achieved through application of the four basic principles of accounting for income taxes:

1. A current tax liability or asset is recognized for the estimated taxes payable or refundable on tax returns for the current year.
2. A deferred tax liability or asset is recognized for the estimated future tax effects attributable to temporary differences and carryforwards.

3. The measurement of current and deferred tax liabilities and assets is based on provisions of the enacted tax law. (The effects of future changes in tax laws or rates are not anticipated.)
4. The measurement of DTAs is reduced, if necessary, by the amount of any tax benefits that, based on available evidence, are not expected to be realized.

In reaching the above conclusion, the FASB considered whether the deferred tax consequences of temporary differences are an asset as defined in paragraph 25 of Concept Standard 6¹⁷. Since all of the characteristics of the definition of “asset” were met, the Board concluded that the total deferred tax consequences of temporary differences (net of valuation allowances) should be recognized on the balance sheet as an asset.

b. International Financial Reporting Standards (“IFRS”)

International Accounting Standards No. 12, *Accounting for Taxes on Income* (“IAS 12”) provides guidance for accounting for income taxes. Similar to FAS 109, it prescribes that current tax liabilities (assets) for the current and prior periods shall be measured at the amount expected to be paid to (recovered from) the taxation authorities, using the tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. It also states that if the tax amounts already paid with respect to current and prior periods exceeds the amount due for those periods, the excess shall be recognized as an asset as long as it is probable that this difference will be recovered in the future. It further specifies that DTAs should not be discounted.

The treatment of DTAs under IFRS is quite similar to the treatment of such assets under the US GAAP financial reporting basis. A DTA must be set up when future IFRS income is expected to exceed future taxable income. One of the key drivers of that difference will come from the change in reserve expense calculated under the IFRS model versus the rules prescribed by the taxing authority – resulting in timing differences in recognition of taxable income. The entire asset must be recognized on the balance sheet net of the amounts that are likely to not be recoverable in the future.

c. Canadian GAAP and Statutory

Canadian Institute of Chartered Accountants’ Handbook section 3465 (“CICA 3465”) provides guidance for accounting for income taxes. Similar to FAS 109 and IAS 12, it requires that DTAs be measured as the tax benefits to be received in future years, as long as the recovery is *more likely than not*.

Until the tax law changed in 2007, Canadian deferred tax calculations were in fact discounting future taxation elements. The table below cites an example taken from Appendix 1 of “Educational Note on Future Income and Alternative Taxes”,

¹⁷ Assets : probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events

Example 1

Line		2001	2002	2003	2004	2005
1	Corporate Tax rate		40%	37%	34.50%	33.50%
2	Val Int Rate		6.50%	6.50%	6.50%	6.50%
3	Equivalent Discount Rate		0.93897	0.93897	0.93897	0.93897
4	Tax Res	1,500.00	1,400.00	1,075.00	600.00	0
5	GAAP Reserve	1,200.00	1,150.00	900.00	500.00	0
6	Temp Diff	300.00	250.00	175.00	100.00	0
7	Change in Temp Diff		50.00	75.00	75.00	100.00
8	Future Tax Cash Flows		20.00	27.75	25.88	33.50
9	Discounted Future Tax Provision	96.30	80.10	55.60	32.10	
10	Policy Liab before Carveout(PLBCO)	1,296.30	1,230.10	955.60	532.10	-

Legend:

Lines 1, 2, 4, and 5 are given.

$$(3) = 1/[1+ (2)]$$

$$(6) = (4) - (5)$$

$$(7) = (6)_{t-1} - (6)_t$$

$$(8) = (1)*(7)$$

$$(9) = \text{Present value of future values in line (8).}$$

$$(10) = (5) + (9)$$

The sum of line 8 across the future years equals 107.13 (*i.e.*, undiscounted). This would be the DTL as we would know it under US statutory accounting treatment.

The instructions then simply divide Line (10) into Future Tax Liability (“FTL”) and Policy Liability after Carveout (“PLACO”), for accounting placement in the balance sheet. The PLACO, or FTL can be either line (9) itself or a grossed up version thereof, by dividing FTL by (1-T), depending on the accountant’s preference.

Line 10 is a result equivalent to the US statutory method if you ignore the difference between undiscounted versus discounted future taxes. To wit:

	Undiscounted (US)	Discounted (Canadian)
US Statutory Reserve (Line 5)	1,200.00	1,200.00
DTL (Line 8 or 9)	107.13	96.30
PLBCO	1,307.10	1,296.30

The issue is symmetric. That is, if the tax reserve were less than the statutory reserve, the gross DTL would instead be a gross DTA (net of any recoverability issue as indicated above).

Canadian tax law changed in 2007 resulting in tax reserves being equal to statutory reserves (except for some non-life short term liabilities where tax reserves were equal to 95% of statutory reserves). Therefore, insurance companies reporting under Canadian guidelines have minimal DTA/DTL related to tax/statutory reserve differences on their balance sheets. Canada is planning to move to IFRS by 2012, but the fact remains that Revenue Canada recognizes statutory reserves (which are marked-to-market) as the tax reserves in most instances, thus currently eliminating the need for any DTA or DTL.

The Canadian method of handling discounting goes one step further. The ostensible disclosure of DTLs and DTAs is on an undiscounted basis. However, the effect of DTA and DTL discounting with respect to policy liabilities is embedded in the policy reserves. In this manner, the balance sheet in its entirety reflects discounting with respect to those policy liabilities. It is recognized that discounting on DTAs and DTLs on other balance sheet items may be much more difficult to manage.

This approach has the advantage of restricting the discounting of the DTA to policy net liabilities, where the data is readily available and subject to discounting according to accepted actuarial methodology.

Appendix B – Explanation of the Deferred Tax Guidance under SSAP No. 10¹⁸

Statutory Statement of Accounting Principles No. 10, *Income Taxes*, (“SSAP 10”) describes how to calculate DTAs. The following is a summarized version:

- Sum up the temporary differences, book vs. tax basis of assets and liabilities (*e.g.*, statutory reserves vs. tax reserves, Code section 848 unamortized balances, etc.¹⁹ Also sum up the other future income and deduction items (such as any Code Section 807(f) 10-year spreads, net operating loss carryforwards, etc.).
- DTLs arise from the future taxable income items (those items where future taxable income will exceed future statutory income algebraically). Examples: (a) Bonds originally purchased at market discount, where the statutory accrual of discount will not be taxed until disposal. (b) Taxable income that was subject to a 10-year spread and there are still years to go to amortize the remaining amount.
- DTAs arise from the future deductions (where taxable income is less than statutory income algebraically). Examples are unrealized losses on real estate, remaining Code section 848 DAC tax amortization, and excess of statutory reserves over tax reserves.
- Gross DTLs and DTAs consist of the "inventory" of all temporary differences, multiplied by the enacted tax rate (generally 35%).

SSAP 10 contains special rules for establishment of final net DTAs and DTLs in the statutory annual statement. In order to determine the amount of admitted DTAs, one goes through the following steps:

- Paragraph 10a, SSAP 10, allows gross DTAs (reversing within one year) to the extent that such a deemed net operating loss could be carried back to prior years (insofar as possible).
- Paragraph 10b, SSAP 10, permits admission of any remaining gross DTAs, as the lesser of: 1) the amount expected to result in a realized tax benefit over the next 12 months from the statement date, or 2) 10% of capital and surplus at the end of the prior quarter.

¹⁸ Statement of Statutory Accounting Principles No. 10, “Income Taxes”. Accounting Practices and Procedures Manual, National Association of Insurance Commissioners (US), 2008.

¹⁹ As a planning issue, the level of aggregation at which that is done is up to the company on this issue, but generally the more granular it is, the higher the eventual admitted DTA.

- Paragraph 10c, SSAP 10, allows any remaining gross DTAs to be offset against existing gross DTLs.

After the operation of Paragraphs 10a, 10b, and 10c, any remaining gross DTA is non-admitted (does not enter the annual statement as an admitted asset).

The result of the above is that there are three possible deferred tax “corridors” companies may be in.

- The total of gross DTLs exceeds the total of gross DTAs:

In this case the company posts on its balance sheet the net excess of gross DTL over gross DTA as a liability.

- The total of gross DTLs is less than the total of gross DTAs, but the total gross DTL exceeds the remaining non-admitted DTA (net resultant from SSAP 10, paragraphs 10a and 10b):

In this case, the final net DTA (in the company’s statutory balance sheet) equals the “preliminary admitted DTA” (net resultant from SSAP 10, paragraph 10a and 10b), minus the excess of the DTL over the preliminary non-admitted DTA (gross DTA minus preliminary admitted DTA). Here the company will post a net DTA on its balance sheet equal to the gross DTA over the gross DTL.²⁰

- The total of gross DTLs is less than the non-admitted portion of the DTA (after application of SSAP 10, paragraphs 10a and 10b):

In this case, the entire DTL offsets a like amount of non-admitted DTA. Here the company will post on its balance sheet a net DTA equal to the admitted DTA per the SSAP 10 paragraph 10a and 10b computation.

Please refer to the attached table for an illustration.

Assume that the statutory reserve release approximates the actual assumed net benefits to be paid during the runoff of the liability, and that the interest rate is zero. The actual net benefits become expense items, and the statutory reserve decrease (annually adjusted for deferred taxes) becomes a taxable income item. Such annual adjustment for deferred taxes is equal to the change in the difference between statutory reserves and tax reserves. It is useful to examine what happens if we are wrong about the assumption that the statutory reserve release approximates the future net benefits paid. If we are wrong about that assumption, then it is possible that the DTA overstates or understates the future statutory income that will result from the runoff of the liability.

²⁰ This is the result because the excess of the gross DTL over the preliminary non-admitted DTA is subtracted from the Preliminary Admitted DTA. Algebraically, we have Preliminary Admitted DTA – [Gross DTL – preliminary non-admitted DTA]. By inspection that equals Total Gross DTA – Gross DTL.

Statutory Analysis of Effect of an Incremental Deferral of Tax on Company Balance Sheet

Situation prior to deferment of tax:

- (a) - Final total of DTLs exceeds the total of gross DTAs. Here the company posts a net DTL as a liability.
- (b) - Final total of DTLs is less than the total of gross DTAs, but exceeds the preliminary non-admitted DTA. That is, it "eats into" the non-admitted DTA and results in booking a net DTA (total DTAs over DTLs)
- (c) - Final total of DTLs is less than the non-admitted total DTA. This results in the booked DTA equaling the preliminary admitted DTAs.

<i>Numerical Example:</i>	Net of SSAP 10, Parags 10a and 10b					Effect of \$20 Deferment on Company*			
	Initial DTA	Admitted pct of DTA	Non-Adm [NaDTA]	DTL	Final Net DTA <DTL>	(A) Add to Gross DTL	Net DTA <DTL>	(B) Net DTA Change	Net Benefit
(a).	100.00	40.00	60.00	120.00	(20.00)	20.00	(40.00)	(20.00)	-
(b).	100.00	70.00	30.00	40.00	60.00	20.00	40.00	(20.00)	-
(c).	100.00	40.00	60.00	50.00	40.00	20.00	30.00	(10.00)	10.00

Explanations:

- Case (a). DTL exceeds total DTA by 20. Therefore, the company shows a net DTL on Page 3. Any further DTL added simply increases the net company DTL \$-for-\$.
- Case (b). DTA exceeds DTL, but DTL - NaDTA is 10. Such excess reduces final net admitted company DTA by 10, from 70 to 60. Any subsequent increase in DTL reduces the net admitted DTA \$-for-\$.
- Case (c). DTL is less than NaDTA, by \$10, Thus the gross admitted DTA (before effect of paragraph 10c) is available to post to the Company asset page. There is still a "corridor" of \$10 (i.e., 60-50) that can derive a surplus benefit, should company establish an additional DTL up to that amount. Beyond a \$10 increase in DTL there is no statutory benefit to the program other than the \$10 (other than use of the money).

Summing up, the greater the ability of the deferred tax rules to "absorb" the increase in the incremental DTL, the greater the potential statutory surplus benefit. The potential benefit is limited to the "excess" of Non-Admitted DTA over DTL, This "excess" is easily obtainable from the annual statement data ("Notes to Financial Statements").

* Assuming \$20 decrease in current tax.

Appendix C – Excerpt from *TAXING TIMES*, May 2009



ACLI UPDATE COLUMN

By William Ehwell

ACLI'S CAPITAL & RESERVE RELIEF PROPOSALS

In late 2008, in the midst of what has been described as “an unprecedented time of economic upheaval,”¹ the American Council of Life Insurers (ACLI) made several proposals to the National Association of Insurance Commissioners (NAIC) to provide life insurers the necessary capital flexibility to operate in a highly volatile economic climate. These proposals, many of which have been under consideration by insurance regulators for several years and were expected to be adopted in 2009, related to four categories: (1) life insurance reserves; (2) annuity reserves and risk-based capital; (3) risk-based capital for investments; and (4) accounting for Deferred Tax Assets (DTAs). ACLI had urged NAIC to adopt these proposals in time for them to apply to life insurance companies' year-end 2008 financial reports.

ACLI's proposals, if implemented, would have freed up approximately \$25–30 billion in capital that is now trapped due to outdated reserving, accounting and investment standards that ultimately impact risk-based capital requirements. In the current economic environment, these conservative methodologies may actually cause undue stress to the very companies whose financial integrity they were intended to assure. The capital provided through implementation of ACLI's suggested changes was estimated to be 6–7 percent of the industry's total adjusted capital reported for 2007.

NAIC CONSIDERATION OF ACLI'S PROPOSALS

In response to ACLI's request, NAIC created the Capital and Surplus Relief Working Group to review these proposals with the aid of several NAIC technical groups. In December 2008, these technical groups approved six of ACLI's nine proposals, in some cases with modifications that would have reduced the amount of relief afforded by approximately one-half.² On Jan. 27, 2009, the NAIC Working Group adopted these recommendations from the technical groups.³ As has been widely reported, on Jan. 29, 2009, NAIC's Executive Committee and Plenary ultimately rejected expedited action on all these proposals.⁴

DTA PROPOSAL

While ACLI views all these proposals as important, the proposal to modify the accounting for DTAs has the largest potential impact for the life insurance industry. DTAs represent amounts that an insurance company may be able to use to offset future tax liabilities if the insurer ultimately earns a profit in that future period. While the technical nature of the DTA has been discussed previously in an earlier edition of this publication,⁵ this update column focuses on the ACLI's DTA proposal and the NAIC's subsequent modifications.

Statutory accounting rules have placed conservative limitations on the amount of a DTA that companies may recognize. In light of the recent unprecedented declines in equity and fixed income investment valuations, the current constraints on the admissibility of DTAs are unnecessarily amplifying the adverse economic effect on insurers. Consequently, ACLI requested that NAIC consider revising the NAIC Statement of Statutory Accounting Principles No. 10—*Income Taxes* (SSAP 10) for realization of DTAs due to the economic crisis and its impact on insurer's surplus.⁶

Currently, SSAP 10 admits gross DTAs in an amount equal to the sum of:

1. Federal income taxes paid in prior years that can be recovered through loss carrybacks for existing temporary differences that reverse by the end of the subsequent calendar year;
2. The lesser of:
 - i. The amount of gross DTAs, after the application of paragraph 1, expected to be realized within one year of the balance sheet date; or
 - ii. 10 percent of statutory capital and surplus; and
3. The amount of gross DTAs, after application of paragraphs 1 and 2, that can be offset against existing gross deferred tax liabilities (DTLs).⁷

These DTA calculation components provide a conservative limitation by restricting the DTA's realization pe-

riod to one year and capping this component amount at 10 percent of adjusted capital and surplus.⁸ Generally, if the surplus limitation does not come into play, SSAP 10 allows recognition of net DTAs (gross DTAs net of DTLs) in an amount equal to DTAs that reverse by the end of the subsequent calendar year. This approach employs an unrealistically short time period for allowing an insurance company to utilize a DTA for determining admissibility. Equity market declines and investment write downs under current economic conditions, coupled with statutory reserving and the expensing of acquisition costs, are giving rise to growing amounts of DTAs that companies often will realize more than one year in the future. Utilization of the SSAP 10 formulaic approach for admitting an insurance company's DTAs is far more conservative than the approach to DTA recognition used in US GAAP (SFAS 109) or International Financial Reporting Standards (IFRS).

US GAAP allows full recognition of the entire DTA, but sets up a valuation allowance (or reserve) for any DTA that has a likelihood of 50 percent or better that some portion or all of the DTA will not be realized.⁹ The valuation allowance should be sufficient to reduce the DTAs to the amount that is more likely than not to be realized.¹⁰ Aligning DTA admissibility with US GAAP standards provides the industry with the ability to recognize the tax benefit of DTAs that are more likely than not to be realized, while still requiring a reserve threshold that meets the principles of statutory accounting.

ACLI believes that the time period over which an insurance company can realize a DTA for a tax loss or credit carry-forward should be consistent with the federal tax law and not be an unrealistically short period that has no basis under the tax law. Specifically, ACLI requested that NAIC: (1) for 2008, increase the period over which the benefits are projected to be realized from one year to five years and increase the limit as a percent of statutory capital and surplus from 10 percent to 25 percent; and (2) replace the current limits on the admissibility of DTAs under SSAP 10 with a valuation allowance approach similar to US GAAP.¹¹

Because of the interdependency between SSAP 10 paragraphs 10a and 10b relating to the reversal of existing temporary differences, ACLI requested that the limits of both 10a and 10b change concurrently, as these two sections were drafted to work in an interdependent manner in the existing version of SSAP 10. These changes included changes to paragraphs 10a, 11a, and 11d.¹² Current paragraph 10a allows admission of gross DTAs to the extent that taxes paid in the carryback period could be recovered by the reversal of those existing temporary differences within the next year.¹³ Current paragraph 10b allows admission of gross DTAs in the amount expected to be realized from the reversal of existing temporary differences in the subsequent calendar year, less the amount of gross DTAs admitted under paragraph 10a, but not in excess of 10 percent of adjusted capital and surplus.¹⁴ Determining the realizability of DTAs over a future period also requires the determination of the reversing temporary differences over that same period.¹⁵ To properly preserve this relationship, modification of paragraph 10b(i) requires a similar modification to paragraph 10a to account for reversals of existing temporary differences within the following three years.

NAIC DTA MODIFICATIONS

Based on a recommendation from the NAIC Statutory Accounting Principles Working Group in December 2008, the NAIC Capital and Surplus Relief Working Group recommended increasing the realization limitation period from one year to three years, and revising the percentage of capital surplus limitation from 10 percent of capital and surplus to 15 percent of capital and surplus.¹⁶ The Working Group also recommended that the Statutory Accounting Principles Working Group revisit this issue after the 2009 reporting period to determine if these reduced limitations remain appropriate.¹⁷

To address concerns about losing regulatory authority over companies that would be subject to any type of regulatory control based on their level of risk-based capital, the Capital and Surplus Relief Working Group further modified the proposal to prohibit the additional increase

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generated by the revised DTA limitations counted in: (1) determining capital or surplus for RBC purposes if the company is below the trend test line; (2) determining the extraordinary dividend threshold; (3) holding company filing triggers; (4) calculation of investment limitations, including the basket clause; (5) liquidation and rehabilitation triggers; and (6) any other regulatory processes and procedures that utilize admitted assets or statutory surplus.¹⁸ The Working Group also included a requirement that insurers separately report the amount of assets or surplus admitted under the increased thresholds by specifically reporting the items as a write-in to where the impact can be transparent to users of the financial statements.¹⁹

FURTHER CONSIDERATIONS

Because NAIC declined to act, the resulting lack of uniform guidance on how to respond to rapidly changing and

volatile economic conditions leaves the responsibility for addressing these concerns to the individual states. Several states have already granted relief to individual domestic companies to implement some of the relief ACLI requested.²⁰ Additionally, NAIC continues to consider some of the proposals through the NAIC's standard process of debate in technical groups and committees. ACLI expects that the NAIC Statutory Accounting Principles Working Group will continue to review the DTA proposal, so ACLI will continue to work with NAIC and individual states to help them understand how the DTA and other proposals will: (1) provide insurance life companies with a financial cushion and operational flexibility; (2) provide the public with more accurate information on the industry's ability to withstand any further potential downturn in the economy; and (3) give consumers what they need to make informed decisions about their financial futures. ◀

END NOTES

- ¹ See Press Release, NAIC, *Capital, Surplus Relief Measures Receive Open, Expedient Review* (Jan. 5, 2009), at http://www.naic.org/Releases/2009_docs/capital_surplus_review.htm.
- ² See Capital & Surplus Relief Working Group, *Guidance of Information Relative to Each ACLI Request*, at http://www.naic.org/documents/committees_ex_capital_surplus_relief_wg_consensus_rec_pkt.pdf.
- ³ See Press Release, NAIC, *NAIC Holds Hearing to Discuss Capital and Surplus Changes* (Jan. 7, 2009), at http://www.naic.org/Releases/2009_docs/capital_surplus_hearing.htm.
- ⁴ See Press Release, NAIC, *Regulators Deny Industry's Request To Lower Capital, Surplus Standards* (Jan. 29, 2009), at http://www.naic.org/Releases/2009_docs/capital_surplus_denied.htm.
- ⁵ See, e.g., Edward L. Robbins, "Calculation of Tax Expense in a Principles-Based Reserve Environment," *TAXING TIMES*, Feb. 2008, at 24.
- ⁶ See letter from Frank Keating (ACLI) to Sandy Praeger (NAIC) (Nov. 11, 2008), at http://www.naic.org/documents/committees_ex_capital_surplus_relief_wg_proposal_pkt.pdf.
- ⁷ See NAIC Statement of Statutory Accounting Principles No. 10—*Income Taxes* (SSAP 10), para. 10.b.1 (1-year restriction of realization period) and para. 10.b.ii (10% limitation of adjusted capital and surplus).
- ⁸ *Id.*
- ⁹ Statement of Financial Accounting Standards No. 109 (FAS 109) (Feb. 1987), at <http://naso.org/pdfs/109.pdf>.
- ¹⁰ *Id.*
- ¹¹ See Keating letter, *supra* note 5.
- ¹² See Bruce Ferguson & Paul Graham letter to NAIC's Capital and Surplus Relief Working Group (Jan. 23, 2009), at http://www.naic.org/documents/committees_ex_capital_surplus_relief_exposure_comments_acll.pdf.
- ¹³ See SSAP 10, *supra* note 7.
- ¹⁴ *Id.*
- ¹⁵ *Id.*
- ¹⁶ See Report from Thomas Hampton, Chair, Capital and Surplus Relief (EX) Working Group to NAIC Executive Committee, Jan. 28, 2009, at http://www.naic.org/documents/e_capital_surplus_relief.htm.
- ¹⁷ *Id.*
- ¹⁸ *Id.*
- ¹⁹ *Id.*
- ²⁰ See, e.g., Iowa State Insurance Bulletin 09-01, Feb. 3, 2009, at <http://www.id.state.i.us/docs/bul0901.pdf> (permitting domestic companies to use higher limitations to determine the admitted amount of DTAs).

Appendix D – Formulas Used in Tables

Table I Legend

Investment Income Rate =5%.

Discount Rate = 1/1.05

Ratio of Tax Reserve to Book Reserve =85%.

Actual to Expected Claims = 90%.

<u>Item</u>	<u>Description</u>
Expected Pre-Tax Cash Flows (ECF _t):	----- Given -----
Book Reserve, beg. of Yr (BR _t):	$(BR_{t+1} - ECF_t)/(1.05)$
Tax Reserve beg. of yr (TR _t):	$(.85)*(BR_t)$
DTA	$(.35)*(BR_t - TR_t)$
Actual Cash Flows (ACF _t)	$(.90)*(ECF_t)$
Investment Income on (BR _t):	$(.05)*(BR_t)$
Book Profit post-tax (BP _t):	$(.65)*(ACF_t)+(BR_t - BR_{t+1})+(.35)*(TR_{t+1}-TR_t)$ + $DTA_{t+1} - DTA_t + (.65)*(Inv.Inc.on BR_t)$
Ratio	$(BP_t)/(10%*CF_t)$

Table 2 Legend (continuing from Table 1 legend)

Required Capital Beg.of Yr (RC _t):	$(RC_{t+1} - BP_t)/(1+.65*.05)$
Release of RC _t :	$RC_t - RC_{t+1}$
Post-Tax Inv.Inc. on RC _t :	$(.65)*(.05)*RC_t$
Distributable Earnings (DE _t):	$BP_t + (Release\ of\ RC_t) + (Post-Tax\ Inv.Inc.\ on\ RC_t)$

Analysis of Initial Required Capital in Table 2 (i.e., \$183.17)

Reconciliation of Table 2 Required Capital for Year 1

PV(Total CF's)AFIT	\$549.51 (-)	See Present Value Schedule
Beginning Stat Res (assumes Cash flows BFIT)	523.96 (+)	See Table 1.
PV(Taxes on tax reserve releases)	133.98 (-)	See Present Value Schedule
PV(DTA releases)	\$23.64 (-)	See Present Value Schedule
Net Capital Need	<u>(183.17)</u>	

Present Value Schedule

Year	Rel TR	Cash FI*.65	Rel DTA
1	62.73	(97.50)	3.87
2	57.37	(87.75)	3.54
3	52.59	(78.98)	3.25
4	48.33	(71.08)	2.99
5	44.55	(63.97)	2.75
6	41.20	(57.57)	2.54
7	38.24	(51.82)	2.36
8	35.64	(46.63)	2.20
9	33.35	(41.97)	2.06
10	31.36	(37.77)	1.94
NPV	\$382.80	\$549.51	\$23.64
Tax @ 35%	\$133.98		

Legend for the Analysis of Initial Required Capital

- Rel TR: Tax reserve release from Table 1.
 Cash FI*.65: Actual cash flows from Table 2, multiplied by 65 percent.
 Rel DTA: DTA release from Table 1.
 NPV: Net present value, at a discount rate of "65 percent of the 5 percent investment income rate."

Generalizing from Table 2, to show that $DE_t=0$ generally, when RC_t , calculated post-tax, is exactly sufficient in an adverse scenario, to fund the excess of actual over expected negative pre-tax cash flows [$ExcCF_t = (ACF - ECF)$].

From Table 3 Legend below, formula (7), $BP_t = .65*(ACF_t - ECF_t)$. (1)

When $ECF_t > ACF_t$, this can be expressed as $ACF_t = ECF_t + ExcCF_t$. (2)

(Post-tax InvInc. on RC_t) = $.65*i*RC_t$ where i = pre-tax investment income rate. (3)

Combining (1), (2), and (3), plus Legend formula, above, for DE_t ,
 $DE_t = .65*(ECF_t - ECF_t + ExcCF_t) + RC_t*(1+.65*i) - RC_{t+1}$ (4)

But an exactly sufficient RC_t would equal $[-(.65)*ExcCF_t + RC_{t+1}]/(1+.65*i)$ (5)

That is, $RC_t*(1+.65*i) - RC_{t+1} = -.65* ExcCF_t$ (6)

Combining (4) and (6), $DE_t = 0$. QED. (7)

Table 3 Legend (continuing from Table 1):

DTA Beg. Of Yr
Inv.Inc.on [BR - DTA]

$DTA_t = (DTA_{t+1} + .35*(BR_{t+1}-TR_{t+1}-BR_t+TR_t))/(1+.65*.05)$
(.05)*(BR_t - DTA_t). Replace the Inv Inc term in Table 1 with this term.

Generalizing from Table 3, to show that $BP_t = .65*(ACF - ECF)$ generally, where i =pre-tax investment income rate:

$$BP_t: \quad (.65)*(ACF_t)+(BR_t - BR_{t+1})+(.35)*(TR_{t+1}-TR_t) + DTA_{t+1} - DTA_t + (.65)*(Inv.Inc.on BR_t) \quad (1)$$

$$DTA_t = (DTA_{t+1} + .35*(BR_{t+1}-TR_{t+1}-BR_t+TR_t))/(1+.65*i) \quad (2)$$

$$Inv.Inc.on [BR - DTA] = i*(BR_t - DTA_t) \quad (3)$$

Substituting (2) and (3) into BP_t formula:

$$BP_t = .65*ACF + BR_t*(1+.65i) - BR_{t+1} + (.35)*(TR_{t+1}-TR_t) + DTA_{t+1} - DTA_t*(1+.65i) \quad (4)$$

$$\text{But from (2), } DTA_{t+1} - (1+.65i)*DTA_t = -.35*(BR_t - BR_{t+1} - TR_t + TR_{t+1}) \quad (5)$$

and

$$BR_{t+1} - (1+.65*i)*BR_t = BR_{t+1} - (1+i)*BR_t + .35*BR_t = ECF + .35*i*BR_t \quad (6)$$

Substituting (5) and (6) into (4):

$$\begin{aligned} BP_t &= .65*ACF - .35*(BR_{t+1}-TR_{t+1}-BR_t+TR_t) + .35*(TR_{t+1}-TR_t) - ECF - .35*i*BR_t \\ &= .65*ACF - ECF - .35*(BR_t - BR_{t+1} + i*BR_t) \\ &= .65*ACF - ECF + .35*ECF \\ &= .65*(ACF - ECF) \quad \text{QED} \quad (7) \end{aligned}$$

Table 4 Legend (continuing from Table 1):

Change in DTA

$DTA_{t+1} - DTA_t$

Appendix E – Detailed Analysis of Adequacy of the Value of: “Book Reserve minus DTA”.

Let us first take the case of a zero interest assumption.

We can define the Net Book Liability (“NBL”) as the Book Reserve (“BR”) minus the DTA. In this context, it is interesting to determine when the NBL is adequate. While for purposes of this subsection the NBL implicitly reflects 100% of the DTA, this adequacy analysis would need adjustment given that the DTA would not necessarily be fully admitted on the book basis balance sheet.

Let us define the “Economic Reserve”, so that we can determine the general case in which the NBL is adequate from an economic perspective. The Economic Reserve is effectively a post-tax gross premium valuation. That is, the Economic Reserve equals the present value of benefits plus expenses minus gross premiums, all tax-effected, plus the present value of taxes on the releases of tax reserves. If the NBL minus the Economic Reserve is positive, we have adequacy.

BR = Book Basis Reserve

TR = Tax Reserve

DTA = Deferred Tax Asset
= $0.35 * (BR - TR)$

NBL = Net Book Liability
= $BR - DTA$

k1 = Expected pre-tax negative cash flows as a % of Book Basis Reserve

k2 = Tax Reserve as a % of Book Basis Reserve

ER = Economic Reserve

Using the above terminology, the Economic Reserve can be expressed as:

$$\begin{aligned} ER &= k1 * BR - 0.35 * k1 * BR + 0.35 * TR \\ &= k1 * BR - 0.35 * k1 * BR + 0.35 * k2 * BR \\ &= BR * (0.65 * k1 + 0.35 * k2) \end{aligned}$$

Note that DTA can be rewritten as follows:

$$DTA = 0.35 * (BR - TR)$$

$$\begin{aligned}
&= 0.35 * (BR - k2 * BR) \\
&= 0.35 * BR * (1 - k2)
\end{aligned}$$

Plugging the DTA into the formula for the NBL, we get:

$$\begin{aligned}
\text{NBL} &= \text{BR} - \text{DTA} \\
&= \text{BR} - 0.35 * \text{SR} * (1 - k2) \\
&= \text{BR} * (0.65 + 0.35 * k2)
\end{aligned}$$

In order for the NBL to be adequate, it must be greater than or equal to the Economic Reserve.

$$\text{NBL} \geq \text{ER}$$

$$\text{BR} * (0.65 + 0.35 * k2) \geq \text{BR} * (0.65 * k1 + 0.35 * k2)$$

$$(0.65 + 0.35 * k2) \geq (0.65 * k1 + 0.35 * k2)$$

$$0.65 \geq 0.65 * k1$$

$$1 \geq k1$$

So if $k1$ is less than 100%, the NBL is adequate. That is, if the sum of the expected negative cash flows under the Economic Reserve assumptions is less than the book basis reserve, the NBL (which reflects 100% of the DTA), is adequate. Mathematically this implies that if BR is adequate the NBL will also be adequate, based on the Table 1 conclusion that the book profit AFIT equals the pre-tax book profit multiplied by the complement of the marginal tax rate.

If it is desired to reflect a positive interest rate in the calculation, then $(BR) * (k1)$ can also be expressed as “present value of negative cash flows” at some prudent post-tax interest rate. Likewise, $(BR) * (k2)$ can be expressed as the present value of tax reserve releases at some prudent post-tax interest rate. That accomplished, the same conclusion is reached, *i.e.*, that when $k1 \leq 1$, the net statutory liability is adequate.

Appendix F – Single Premium Immediate Annuity Example of Temporary Difference Reversal Pattern

Test of Single Premium Annuity Deferred Tax Asset Threshold

Using 5 years of reversals, adm DTA = 0.0053
 Using 10 years of reversals, adm DTA = 0.0112
 True Discounted DTA = 0.0237

Age(x)	SPIA Reserve		Deferred Tax Asset		Age(x)	SPIA Reserve		Deferred Tax Asset	
	Tax Basis	Stat Basis	Undisc	Disc		Tax Basis	Stat Basis	Undisc	Disc
50	10.8537	10.9688	0.0403	0.0237	80	3.3671	3.3848	0.0062	0.0051
51	10.7187	10.8309	0.0393	0.0234	81	3.0561	3.0715	0.0054	0.0045
52	10.5767	10.6861	0.0383	0.0232	82	2.7542	2.7676	0.0047	0.0039
53	10.4277	10.5340	0.0372	0.0228	83	2.4636	2.4752	0.0041	0.0034
54	10.2714	10.3746	0.0361	0.0225	84	2.1861	2.1960	0.0035	0.0029
55	10.1075	10.2075	0.0350	0.0221	85	1.9236	1.9320	0.0029	0.0025
56	9.9358	10.0325	0.0339	0.0217	86	1.6777	1.6847	0.0025	0.0021
57	9.7559	9.8494	0.0327	0.0213	87	1.4496	1.4554	0.0020	0.0018
58	9.5678	9.6579	0.0315	0.0208	88	1.2402	1.2450	0.0017	0.0015
59	9.3709	9.4576	0.0303	0.0202	89	1.0501	1.0539	0.0014	0.0012
60	9.1650	9.2482	0.0291	0.0197	90	0.8793	0.8824	0.0011	0.0010
61	8.9499	9.0296	0.0279	0.0191	91	0.7276	0.7301	0.0009	0.0008
62	8.7252	8.8013	0.0266	0.0185	92	0.5946	0.5965	0.0007	0.0006
63	8.4908	8.5633	0.0254	0.0178	93	0.4793	0.4808	0.0005	0.0005
64	8.2465	8.3154	0.0241	0.0171	94	0.3808	0.3819	0.0004	0.0004
65	7.9924	8.0577	0.0229	0.0164	95	0.2978	0.2986	0.0003	0.0003
66	7.7284	7.7901	0.0216	0.0157	96	0.2289	0.2295	0.0002	0.0002
67	7.4550	7.5131	0.0203	0.0149	97	0.1726	0.1731	0.0002	0.0001
68	7.1723	7.2268	0.0191	0.0142	98	0.1276	0.1279	0.0001	0.0001
69	6.8809	6.9318	0.0178	0.0134	99	0.0921	0.0923	0.0001	0.0001
70	6.5813	6.6288	0.0166	0.0126	100	0.0648	0.0649	0.0000	0.0000
71	6.2744	6.3184	0.0154	0.0118	101	0.0443	0.0444	0.0000	0.0000
72	5.9609	6.0015	0.0142	0.0110	102	0.0293	0.0293	0.0000	0.0000
73	5.6420	5.6793	0.0131	0.0102	103	0.0186	0.0186	0.0000	0.0000
74	5.3186	5.3528	0.0119	0.0094	104	0.0113	0.0114	0.0000	0.0000
75	4.9922	5.0233	0.0109	0.0086	105	0.0066	0.0066	0.0000	0.0000
76	4.6641	4.6921	0.0098	0.0079	106	0.0036	0.0036	0.0000	0.0000
77	4.3357	4.3610	0.0088	0.0071	107	0.0018	0.0018	0.0000	0.0000
78	4.0089	4.0315	0.0079	0.0064	108	0.0009	0.0009	0.0000	0.0000
79	3.6854	3.7055	0.0070	0.0058	109	0.0004	0.0004	0.0000	0.0000

Legend:

Reserve formula = $[N_x - (11/24) \cdot D_x] / D_x$ at the respective interest rates.
 Deferred Tax Asset (DTA), Undiscounted = 35%(Stat Basis – Tax Basis).
 DTA, Discounted $[(DTA \cdot Disc.)_x]$:

For $x=109$, $0.35 \cdot (\text{Stat Basis}_x - \text{Tax Basis}_x) / (1 + .65 \cdot .05)$.

For $x < 109$, $(DTA \cdot Disc.)_{x+1} + 0.35 \cdot \{(\text{Stat Basis}_x - \text{Tax Basis}_x - (\text{Stat Basis}_{x+1} - \text{Tax Basis}_{x+1}))\} / (1 + .65 \cdot .05)$

Asset threshold for undiscounted DTA values:

- Using 5 years of reversals, DTA(50) – DTA(55)
- Using 10 years of reversals, DTA(50) – DTA(60)