AMERICAN ACADEMY *of* ACTUARIES

Report of the American Academy of Actuaries' Commissioners Standard Ordinary (CSO) Implications Work Group

Presented to the National Association of Insurance Commissioners' Life and Health Actuarial Task Force

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CSO Implications Work Group

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Executive Summary

The CSO Implications Work Group (Work Group) of the American Academy of Actuaries' (Academy) Life Products Committee has concluded that the 2001 CSO Table (Table) is appropriate for nonforfeiture and tax purposes.

The Work Group found that the safe harbor on term cash values could be extended based on the new Tables. However, such a change would require significant legislative efforts for a relatively modest difference. Consequently, the Work Group does not recommend any changes. It should be noted that if additional expansions were to occur in future CSO Tables, then the cumulative expansion could warrant a change.

Although not a nonforfeiture or tax issue, the Work Group notes that this Table should not be imposed as a maximum for Cost of Insurance (COI) rates on Universal Life (UL)[1] products. The Table was developed for valuation purposes, and neither was it designed to cover nor does it actually cover the mortality of every company. Hence, it is inappropriate to use the Table as a maximum for COI rates and this could pose an unnecessary risk to the solvency of some insurers.

Introduction and Scope

The CSO Task Force (Task Force) of the Academy performed an admirable amount of work in generating the Table. Because of the size of the project, the Task Force focused on whether the Table is appropriate for statutory valuation purposes. However, the current regulatory structure does not allow the possibility to implement the Table solely in a valuation context. Rather, implementing the Table for valuation purposes will currently require that companies use the same Table for nonforfeiture purposes and tax purposes. Since the Task Force excluded this work from their charge, the Academy created the CSO Implications Work Group to address the non-valuation implications.

The Work Group explored the nonforfeiture implications of the new Table on typical Whole Life, Term Life, and Universal Life product designs, under a set of assumptions and conditions described in this report. The Work Group also explored potential issues related to the maximum allowable premiums under the tax code, Internal Revenue Code (Code) §7702 and Internal Revenue Code §7702A. Lastly, the Work Group explored whether the new Table created any problems for determining dividends on participating business. The Work Group did not discuss the use or applicability of the Table for pricing purposes, for mortality studies, or other purposes.

In writing this report, it is assumed that the reader has read the Academy 2001 CSO Task Force Report and understands the current regulatory environment.

[1] This includes declared-rate UL, equity indexed UL, and variable UL product designs. This also applies to future designs built-up from the same product chassis and for which the same arguments apply.

Results – Minimum Nonforfeiture Requirements

The Work Group calculated nonforfeiture values for Whole Life, Term Life, and Universal Life products.[2] The Work Group calculated nonforfeiture values based on 1980 CSO (Ultimate only), 2001 CSO Ultimate only, and 2001 CSO Select and Ultimate Tables.

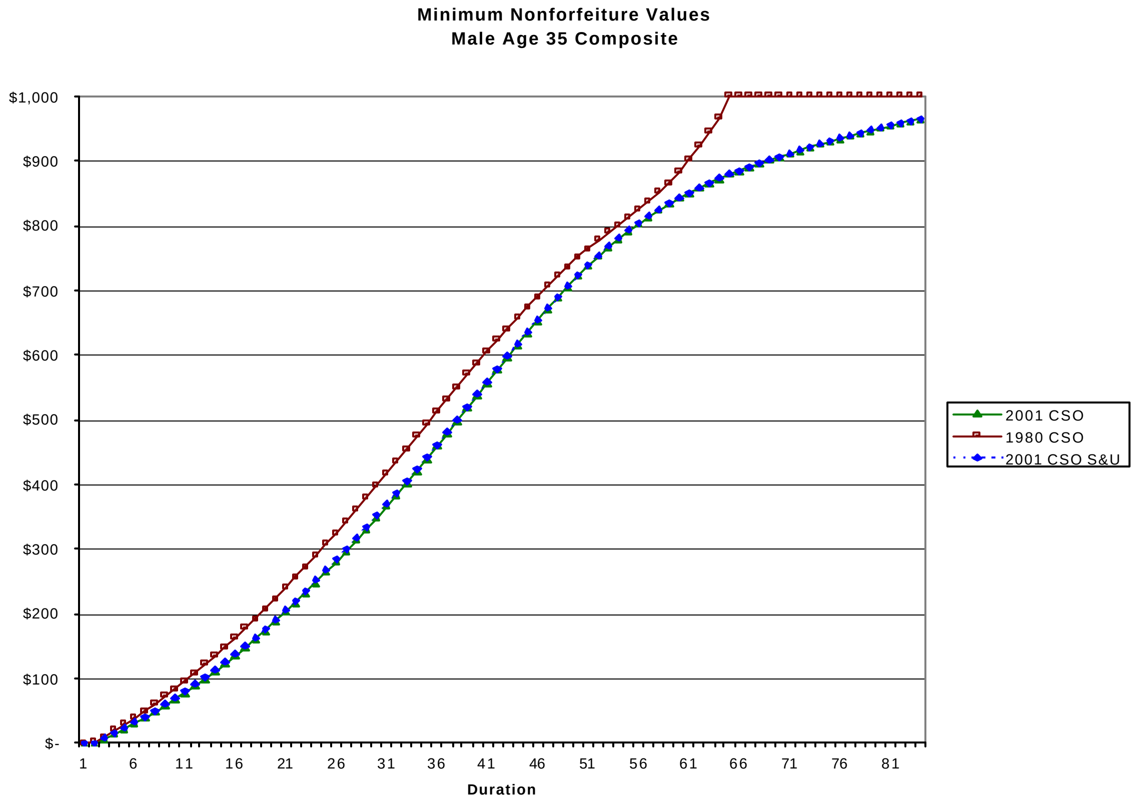
The Work Group did not calculate nonforfeiture values for 1980 CSO Select and Ultimate Tables because this is not current practice for nonforfeiture purposes.

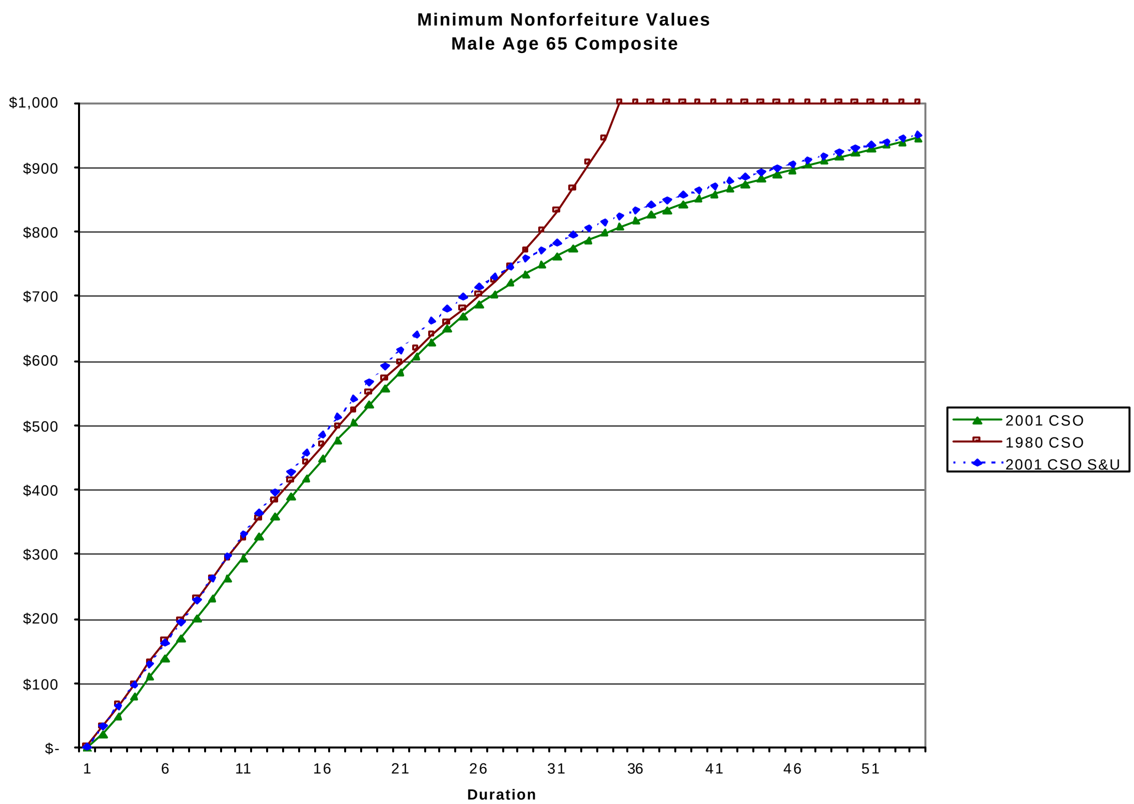
For 2001 CSO Select and Ultimate, however, the Work Group did calculate selected nonforfeiture values. The values were calculated for the benefit of companies who may wish to use Select and Ultimate Tables for nonforfeiture purposes. While these values are provided, the Work Group does not recommend that the Select and Ultimate Tables be the minimum standard, as noted below in the discussion on Universal Life products.

Whole Life and Term Life

For Whole Life, minimum required cash values were calculated according to the Standard Nonforfeiture Law. A full set of the graphs and data is provided in the appendix. Graphs of the results for issue ages 35 and 65, both Male Nonsmoker follow. The values under 2001 CSO Ultimate are less than 1980 CSO at all durations for these two issue ages. As the attained age nears the end of the table, the 2001 CSO values progress more gradually toward endowment than for 1980 CSO. The 2001 Select and Ultimate results and the 2001 Ultimate results are roughly the same for all but the higher issue ages as shown in the graphs.

[2] The nonforfeiture regulations require minimum cash surrender values for Whole Life and Term products. The regulations also require maximum surrender charges for Universal Life products. In this report, the term "nonforfeiture values" refer to minimum cash surrender values when used in a Whole Life and Term context, and it refers to maximum surrender charges when used in a Universal Life context. The cash values of a Universal Life policy are a function of many variables, some of which may also be impacted by the new CSO Table, but the term "nonforfeiture values" in a UL context only refers to surrender charges.


Minimum Nonforfeiture Values
Male Age 35 Composite
$1,000
$900
$800
$700
$600
$500
$400
$300
$200
$100
$-
1
6
11
16
21
26
31
36
41
46
51
56
61
66
71
76
81
Duration
2001 CSO
1980 CSO
2001 CSO S&U


Minimum Nonforfeiture Values
Male Age 65 Composite
$1,000
$900
$800
$700
$600
$500
$400
$300
$200
$100
$-
1
6
11
16
21
26
31
36
41
46
51
Duration
2001 CSO
1980 CSO
2001 CSO S&U

For Term Life, minimum required cash values were also calculated according to the Standard Nonforfeiture Law and assuming an interest rate of 5.75%.[3] The Work Group reviewed 10-, 15-, 20-, 25- and 30-year level term products for quinquennial issue ages 35 to 75.[4] Results for 20-year and 30-year are presented, as the results of other durations are comparable. The nonforfeiture calculations assumed product expiry after the initial level premium term period. Many term products continue with Annually Renewable Term (ART) rates after the initial level term premium period. Typically the ultimate ART rates are set to minimize the required cash values. Nonforfeiture values over the level term period generally produce higher minimum required cash values than a level term product with an ART tail. Therefore, the Work Group only analyzed term products that expire after the initial level term period.

Graphs comparing minimum cash values for 1980 CSO and 2001 CSO by decennial issue ages for 20- and 30-year term are shown in the appendix for Male Nonsmoker, Male Smoker, Female Nonsmoker, and Female Smoker classes. For both Male classes and the Female Nonsmoker class, cash values are typically lower under 2001 CSO compared to 1980 CSO. This is generally true for both the Select and Ultimate and Ultimate versions of 2001 CSO. The resulting cash values under the old and new bases tend to converge at the older issue ages. For the Female Smoker class, minimum cash values under 2001 CSO will generally be greater than 1980 CSO at the younger and middle issue ages, with the greatest difference for issue age 45. For issue age 75, Female Smoker minimum cash values are greater using 1980 CSO than using 2001 CSO.

The following graphs show the minimum required cash values for Male Nonsmoker issue ages 35 and 65 for 20- and 30-year level premium term. The Standard Nonforfeiture Law requires cash values be calculated if the resulting value is greater than $25 per $1000 of insurance. For 20-year level premium term, the resulting cash values for issue age 35 are de minimus.

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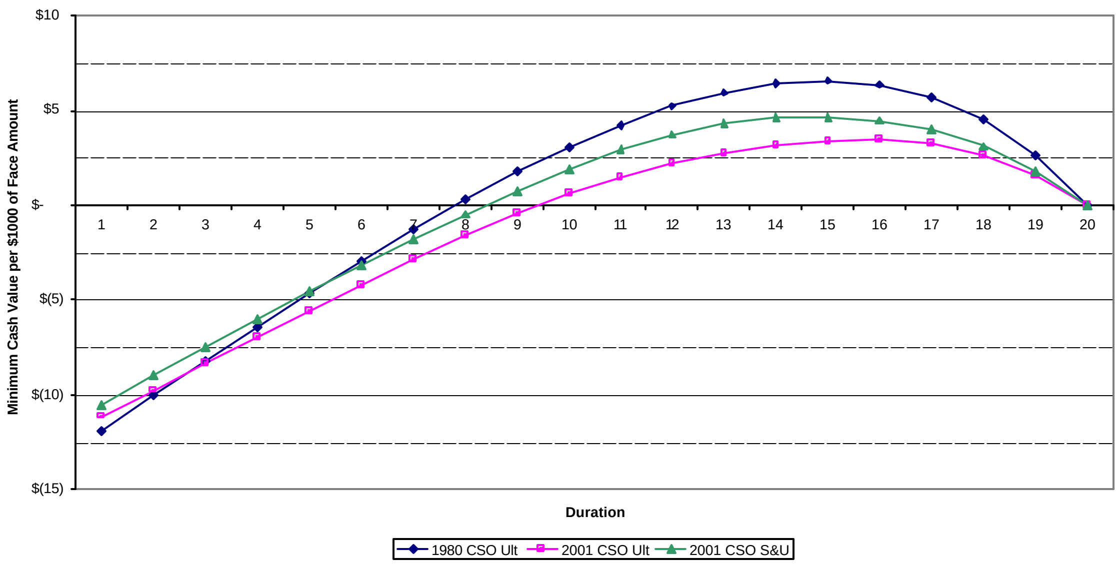
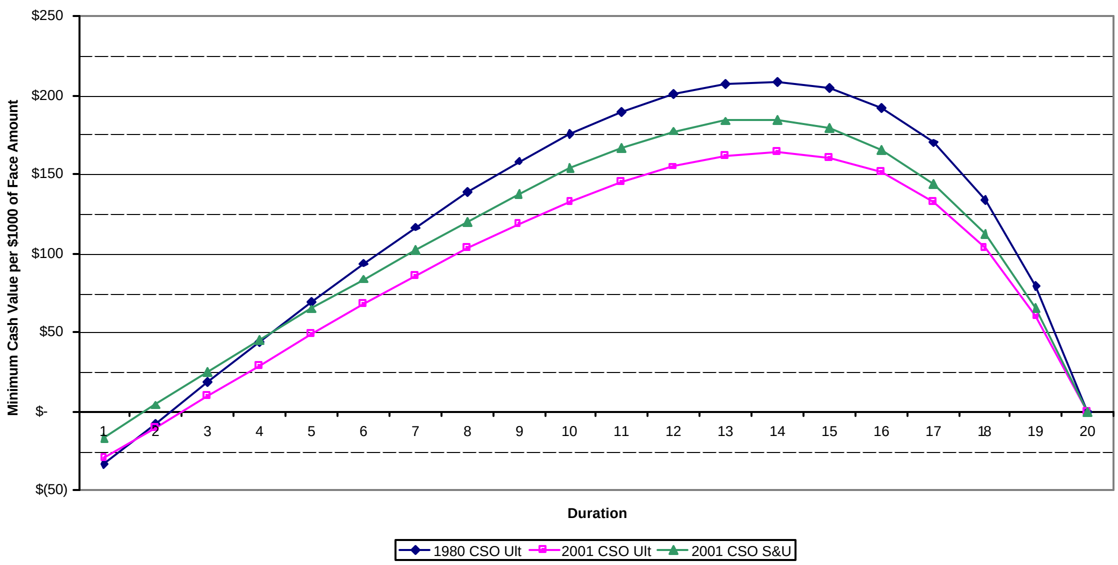
[3] 5.75% is used because it is the 2001 nonforfeiture interest rate for long guarantee duration life insurance contracts. For the shorter products, such as the 10-year product, this long guarantee rate was also used because the typical products all have ultimate ART rates that qualify those products as long guarantees. The Work Group knows of no products that currently exist that would qualify under the shorter durations.

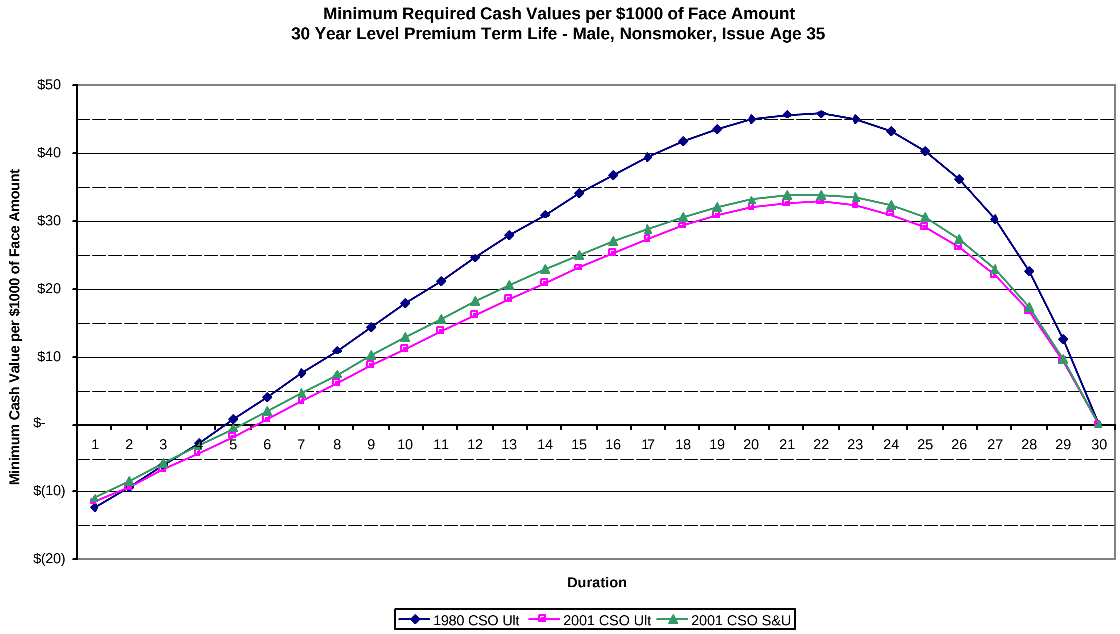
[4] The Standard Nonforfeiture Law provides a safe harbor for term policies with level premiums that are 20 years or less in length and that expire before age 71. To best examine the impact of the Table, the Work Group determined nonforfeiture values as if there were no safe harbor, and the safe harbor is addressed separately.

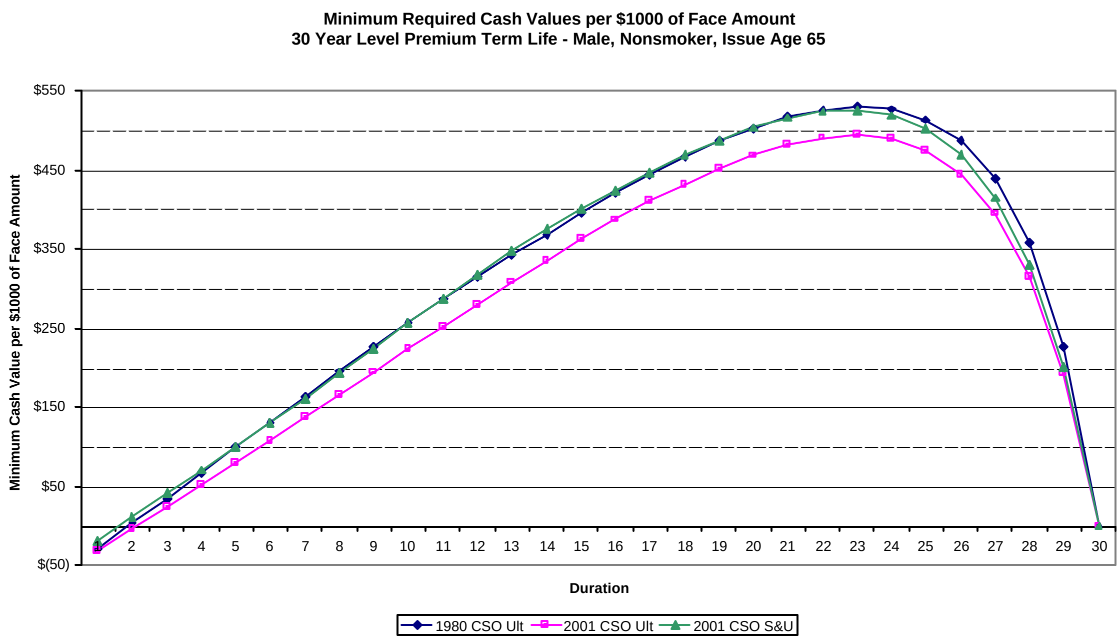
Minimum Required Cash Values per $1000 of Face Amount
20 Year Level Premium Term Life - Male, Nonsmoker, Issue Age 35



Minimum Required Cash Values per $1000 of Face Amount
20 Year Level Premium Term Life - Male, Nonsmoker, Issue Age 65



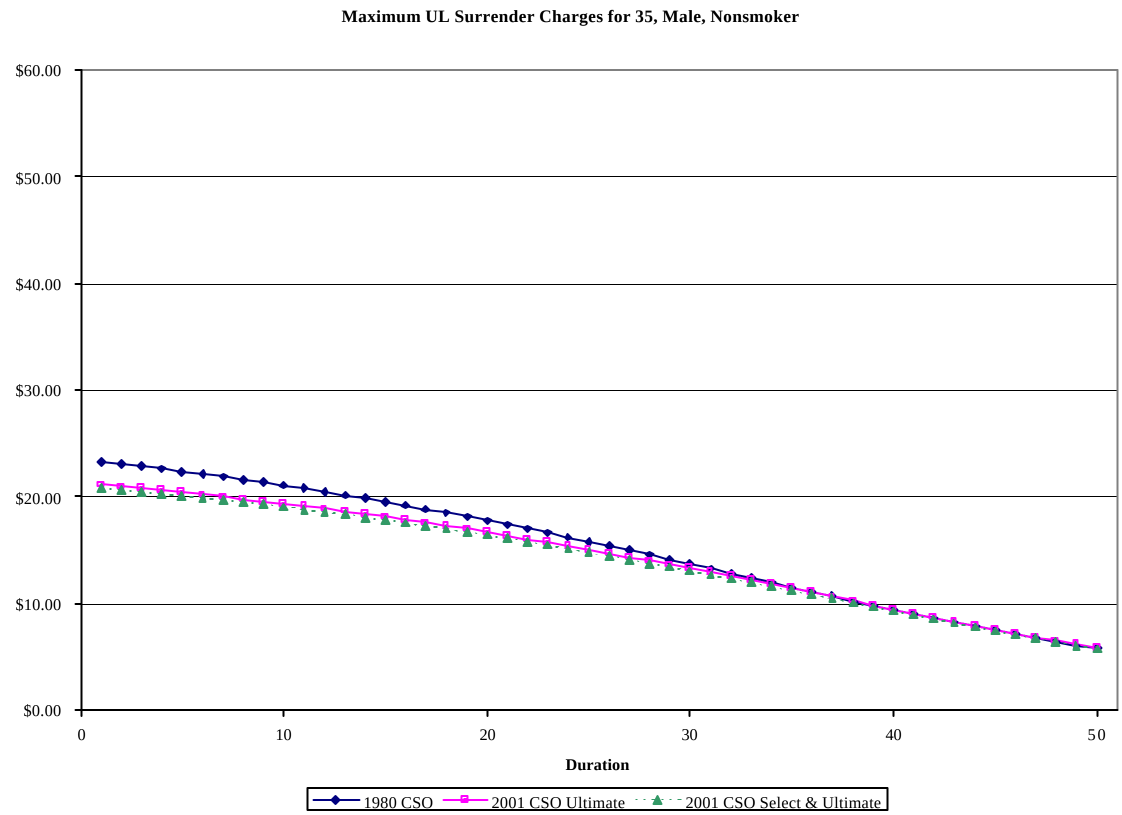




For Term and Whole Life products, the new Tables provide for lower minimum cash values overall, which give the insurance company more flexibility in setting its cash values and consequently, its premiums.

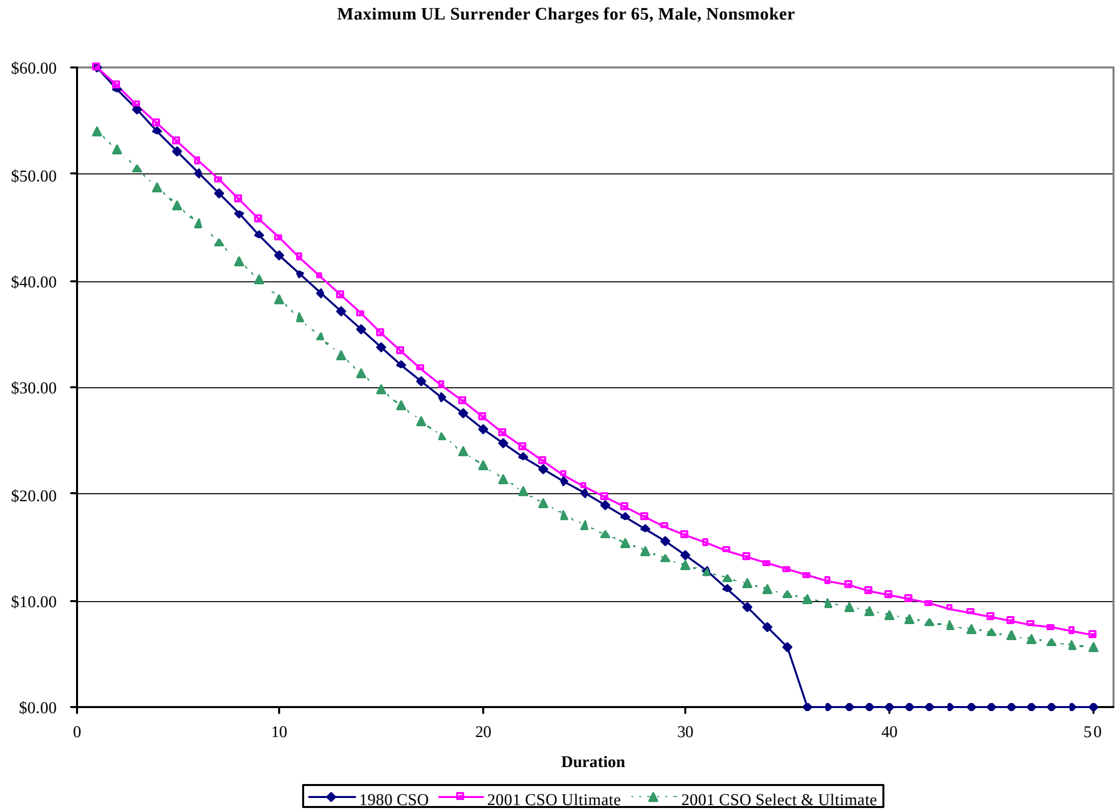
Universal Life

For Universal Life, the nonforfeiture rules require calculation of maximum surrender penalties, rather than minimum cash values. Following the Universal Life Model Regulation, the Work Group computed maximum surrender penalties under the different Tables. The calculations assume level charges over the initial 20-year period for a typical UL policy.[5] The calculations use a 4.5% nonforfeiture rate with semi-continuous[6] functions. A full set of graphs and data is provided in the appendix. Two of those graphs, for ages 35 and 65, both Male Nonsmoker, follow:



[5] Note that neither the type of UL product nor the form of death benefit option affects the maximum allowable surrender charges.

[6] Semi-continuous means that annual premiums are paid at the beginning of each year and death benefits are paid at the time of claim. This was chosen because it produces results that are between curtate and fully continuous and because there are not significant deviations across the three approaches.



Under the new Tables, the maximum allowable surrender charge is generally lower, especially for issue ages 55 and less. On the 2001 CSO Select and Ultimate basis, this difference is even more acute.

The Work Group's interpretation of the laws and regulations is that a company can choose any version of the 2001 CSO Tables. However, if a regulatory jurisdiction were to establish a single minimum standard with regards to Select and Ultimate versus Ultimate only, then the Work Group recommends that the 2001 CSO Ultimate Table be used as the minimum standard for nonforfeiture calculations for the following reasons. First, surrender penalties are designed to recover acquisition expenses, which are not necessarily linked to mortality results. Second, it is important to provide for uniformity between the states and jurisdictions.

Results – Safe Harbor on Term Life Products

The Standard Nonforfeiture Law provides a safe harbor for requiring cash values on term policies. For term products with small cash values relative to the death benefit, the administrative complexities of minimum cash values could outweigh the benefits. Consequently, the law allows those cash values to be omitted.

The Work Group has found that the new Table generally provides for lower cash values on term products, allowing for more room in the safe harbor. The Work Group has found that the current level premium term safe harbor of:

20 years or less expiring before age 71

could be increased to:

- 25 years or less for issue ages up to 45
- term to age 70 or less for issue ages 46 to 60
- 10 years or less for issue ages 61 and older.

The suggested new safe harbor rule was tested on the 2001 CSO Table for Males, Females, Smokers, and Nonsmokers up to issue age 75 relative to the existing exclusion amount.[7] The revised safe harbor for the 2001 CSO Table maintains roughly the same excess over the exclusion amount as the existing safe harbor does for the 1980 CSO Table. This is true for the aggregate but not necessarily true for each, individual cell. For example, female smokers tend to have higher cash values under the 2001 CSO Table but females in aggregate have lower values.

The suggested new safe harbor has a third bullet that adds to the structure of the existing safe harbor. The bullet allows for a 10-year safe harbor exemption for all issue ages 61 and higher. This is appropriate for the aging population and for older consumers who are now purchasing considerably more life insurance than historical standards.

While this suggested new safe harbor is appropriate on a theoretical level, the Work Group is not recommending that such a change be made. This change would require updates to the Standard Nonforfeiture Law, and such updates are quite costly. Since the benefit is modest, such a change is not currently practical. However, if future generations of the CSO Table continue to provide additional incremental expansions to the safe harbor, then such a change ought to be made. Another opportunity for change could be if the Standard Nonforfeiture Law is opened for another purpose.

Results – Tax Reserves, Tax Definition of Life Insurance, and Its Impact on Policyholder Funding

The Work Group has discussed effects of the new Tables in several areas. In some cases, these effects rely upon interpretations of the laws and regulations in advance of guidance from the Internal Revenue Service (IRS). The actual effects will not be known until after such guidance is provided by the IRS. The areas discussed are as follows:

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[7] The existing exclusion amount permits a policy to have no cash values if all of the cash values are calculated to be less than 2.5% of the Face Amount.

- Transition for Tax Reserves – For new business, §807(d)(5)(A) of the Code states that the starting point of the transition period begins when the Tables can be used for valuation purposes in at least 26 states. During the transition period for tax reserves, tax reserves can be based upon either the 1980 or the 2001 CSO Tables. The new Tables must be used beginning December 31 of the calendar year three years after the year in which the 26th state adopts the Table.

- Tax Reserve Calculations – With multiple versions of the Table, the tax rules require the use of the Table that produces the lowest reserves. Based on an American Council of Life Insurers (ACLI) study of the 2001 CSO Tables, the reserves on an Ultimate basis are less than the reserves on a Select and Ultimate basis for the industry and its current mix of products.

  In regards to unismoke versus smoker distinct, the same ACLI study reports that there is no material difference in the aggregate results of using either version. If the IRS adopts these industry recommendations, then tax reserves will be based on the 2001 CSO Ultimate Tables with a choice of either unismoke or smoker distinct.

- Transition Period for Definition of Life Insurance (DOLI) – §7702(c)(3)(B)(i) of the Code links the starting point of this transition period to the transition period for tax reserves. However, the same section also permits a regulation to supercede the Code and define an alternative transition period. The ACLI will recommend that a tax regulation be promulgated which will allow companies to use the new Table on a product-by-product basis as the state insurance departments approve the products priced on the 2001 CSO basis. However, the regulation will require use of the new Table on January 1, 2008, regardless of the progress of state approvals. If the IRS adopts this proposed regulation, then, in all states, insurers can offer life insurance that meets the tax DOLI as well.

- DOLI Mortality Basis – The ACLI also recommends, subject to IRS approval, that 2001 CSO replace 1980 CSO as the reasonable mortality charges used to calculate guideline premiums and 7-pay premiums.[8]

  The table below demonstrates the approximate impact on guideline single premiums, guideline level premiums, and 7-pay premiums, assuming zero expense charges.

Premium Limit	**Percent Change in Single Life Limits – 2001 CSO Ultimate Relative to the 1980 CSO Ultimate, Endowment Age of 100**
Guideline Level Premium, Level DB Option	Male Nonsmoker: 15-20% reduction Female Nonsmoker: 15-30% reduction Male Smoker: 15-20% reduction Female Smoker: 0-20% reduction

[8] Historically, the safe harbor for insurance rates on guideline premiums and 7-pay premiums has equaled the mortality basis for tax reserves. The ACLI study expects this to continue, thereby resulting in guideline premiums and 7-pay premiums being based on the 2001 CSO Ultimate Tables, with either the unismoke or smoker distinct versions.

Premium Limit	Percent Change in Single Life Limits – 2001 CSO Ultimate Relative to the 1980 CSO Ultimate, Endowment Age of 100
Guideline Level Premium, Increasing DB Option	Male Nonsmoker: 20-25% reduction Female Nonsmoker: 30-35% reduction Male Smoker: 15-20% reduction Female Smoker: 20-25% reduction
Guideline Single Premium	Male Nonsmoker: 5-20% reduction Female Nonsmoker: 10-20% reduction Male Smoker: 5-20% reduction Female Smoker: 0-5% reduction
7-Pay Premiums	Male Nonsmoker: 10-15% reduction Female Nonsmoker: 10-15% reduction Male Smoker: 5-15% reduction Female Smoker: 0-5% reduction

See the appendix for more details.

- DOLI Endowment Age – The endowment ages of 95-100 may remain, unless Congress acts to change the Tax Code. The impact on the premium limits for endowment at age 121 was also examined.

Premium Limit	Percent Change in Single Life Limits – 2001 CSO Ultimate, Endowment Age of 121, Relative to 1980 CSO, Endowment Age of 100
Guideline Level Premium, Level DB Option	Male Nonsmoker: 15-20% reduction Female Nonsmoker: 15-30% reduction Male Smoker: 15-20% reduction Female Smoker: 0-20% reduction
Guideline Level Premium, Increasing DB Option	Male Nonsmoker: 0-30% increase Female Nonsmoker: 5% reduction to 30% increase Male Smoker: 5-25% increase Female Smoker: 5-35% increase
Guideline Single Premium	Male Nonsmoker: 5-20% reduction Female Nonsmoker: 10-20% reduction Male Smoker: 5-20% reduction Female Smoker: 0-5% reduction
7-Pay Premiums	Male Nonsmoker: 10-15% reduction Female Nonsmoker: 10-15% reduction Male Smoker: 5-15% reduction Female Smoker: 0-5% reduction

The impact from moving from an endowment age of 100 to an endowment age of 121, along with other details, can be found in the appendix.

- DOLI Corridor Factors – The corridor factors for guideline premium test products are defined in the Code and therefore are also not likely to change (unless the Code is changed). They will likely be treated consistently with the endowment age issue. The Work Group could not calculate revised premium limits for alternate corridor factors because such corridor factors would have to be determined by Congress.
- DOLI Interest Rates – While independent of the new CSO Tables, many feel that the interest rates in the tax code should be lowered to reflect current and possible future market conditions. However, they are also written into the Code and therefore also require an act of Congress to change. If the other issues of the Code are opened, then there might be an opportunity to lower these interest rates to reflect current conditions.

With these anticipated changes, the Work Group analyzed whether the generally lower guideline premiums associated with the 2001 CSO Table have the potential to create policyholder funding problems. The Work Group examined one approach. Based on the results of that approach, the Work Group felt that additional analysis was not necessary.

The approach starts with the assumption that policyholders who pay the guideline single premium into their insurance policies should have a reasonable expectation that the policy will maintain positive Fund Values[9] through age 100. The Work Group chose to look at VUL policies because variable products have greater fluctuations in value for different economic scenarios. Furthermore, VUL products do not require the need to model strategies for setting the declared-rate, thereby reducing the complexity of the analysis. Results of 200 stochastic economic scenarios were examined for two policy cells – the first policy was for a Male, 55, standard nonsmoker risk; the second was similar but age 65.

The policies were modeled under the different scenarios using Guideline Single Premium for both 1980 CSO (as is known today) as well as 2001 CSO (assuming the outcome indicated in the bullets, above). We found that under the 1980 CSO guideline premiums, approximately 99.5% of the scenarios maintained positive Fund Values through age 100. Under 2001 CSO, approximately 98% of the scenarios maintained positive Fund Values through age 100. The Work Group felt that this level of funding was reasonable and the resulting changes were de minimus.

Results – COI Rate Caps

The Work Group finds that it is inappropriate to use the Table as a limit for COI rates on UL product designs. This discussion applies to all UL product designs, including Declared-Rate UL, Equity Indexed UL, Variable UL, and any other UL design that might evolve for which the same argument applies.

[9] This is sometimes also referred to as Contract Value, Account Value, Accumulation Value, or Accumulated Value.

Actuarially, the 2001 CSO Table was neither designed to nor does it actually cover the mortality experience for every specific company.[10] As discussed in the Report from the Academy's CSO Task Force, 6 out of 21 companies from their sample have aggregate mortality that exceeds the 2001 CSO Tables. The difference is even greater for standard underwriting categories versus just the aggregate, because of the development of preferred underwriting categories.[11]

Consequently, using the Table as a cap on COI rates would require some or perhaps many insurers to assess mortality charges below their mortality experience. This undermines rate adequacy, which could pose an unnecessary risk to the solvency of some insurers. Therefore, this Work Group has concluded that any regulatory cap on the COI rates would be actuarially inappropriate.

Two additional considerations lead to the same conclusion. First, capping the COI rates is tantamount to life insurance rate regulation, for which there is no legal authority in most jurisdictions. Second, the NAIC Model Laws and Regulations specify a mortality table for use in determining UL reserves and in determining a surrender charge schedule applicable to UL product designs. However, the nonforfeiture rules are silent as to any *level* of charges, whether it is premium loadings, administrative charges, or specifically the cost of insurance rates. Limiting COI rates would then create a rule that should not exist.

While the 2001 CSO Table is appropriate for use in several different contexts, the Table is not appropriate as a maximum COI rate for UL product designs.

Results – Dividend Policies for Participating Business

The Work Group found no problems with determining dividends on participating policies associated with adopting the new Tables.

Companies generally use one of two approaches to determine dividends. One approach is to use cash values or reserves for determining dividends. With this approach, mortality credits for amounts at risk will be based on larger amounts, excess interest credits will be based on the new values, and loading will be based on the new gross premiums as set by the Company less the new net premiums on the new Tables. As a result, using the 2001 CSO Table will result in different dividend values than using the 1980 CSO Table, but no new problems are created with the use of the new Tables.

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[10] As a valuation mortality table, it does not need to cover the mortality of every company. Rather, the Table was designed to produce aggregate reserves that are appropriate. Asset adequacy testing helps ensure that reserves for each company are adequate, but the Table, alone, does not provide the same coverage.

[11] By definition, the aggregate mortality will be a blend of the preferred mortality and non-preferred mortality. Assuming that preferred mortality is less than non-preferred mortality, then the non-preferred mortality will be higher than the aggregate mortality.

The other approach is to determine fund values or asset shares that are not necessarily equal to the cash values or reserves. For example, the company may use an asset share that was developed at issue. These companies will have to reflect the new amounts at risk, and the new cash values on surrender in developing the fund values. Other than these changes in mechanics, the Work Group believes that the new Tables will not create problems in determining dividends.

The Work Group also notes that the new Tables will overall result in 15% to 20% larger paid-up additions per dollar of dividend. Results will vary by insured's gender and risk class. This provides additional coverage to policyholders who choose this dividend option.

Conclusion

The Work Group found no material nonforfeiture or tax problems created by the new 2001 CSO Tables and therefore recommends that the Tables be adopted.

The 2001 CSO Tables were developed for statutory valuation purposes, but they will also impact or may impact several different non-valuation applications. This report discusses many of the impacts associated with nonforfeiture, cash value safe harbors on term products, tax reserves, tax insurance definitions, policyholder funding, dividend distributions, and UL maximum COI rates. Of those issues except UL maximum COI rates, the Work Group is satisfied, based on its analyses, that the 2001 CSO Tables will not create any new problems.

The Work Group believes that the use of the CSO Table as a maximum for UL COI rates is actuarially inappropriate.

Appendices

Appendix A - Results for Whole Life Nonforfeiture Cash Values

- Appendix A1--Female Composite
- Appendix A2--Female Nonsmoker
- Appendix A3--Female Smoker
- Appendix A4--Male Composite
- Appendix A5--Male Nonsmoker
- Appendix A6--Male Smoker

Appendix B - Results for Term Life Nonforfeiture Cash Values

- Appendix B1--20-Year Level Premium Term Life
- Appendix B2--30-Year Level Premium Term Life

Appendix C - UL Nonforfeiture Surrender Charge Results

Appendix D - Tax Definition of Life Insurance Premium Limit Bar Charts