

行政院金融監督管理委員會九十六年度委託研究計畫

「保費不足準備金之精算實務處理釋例」

委託單位：行政院金融監督管理委員會保險局

研究單位：中華民國精算學會

計畫主持人：陳貴霞

協同主持人：簡仲明

研究員：林榮泰、陳占晃、陳榮森

★本報告不代表行政院金融監督管理委員會意見。

★研究報告之轉載、引用，請加註資料來源、作者，以保持資料之正確性。

中華民國九十六年十一月十六日

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中華民國九十六年十一月十六日

GRB 計畫編號：PG9605-0014

提 要

本研究計畫基於提供精算人員一致性之實務處理方式，於提存保費不足準備金時有所依據。在符合相關法律及精算實務處理原則下，藉此研究計畫案，探討保費不足準備金之相關議題，經由彙整國內外精算實務經驗、條列成具體的實務處理釋例，其目的，在於說明計算保費不足準備金時可能遇到之實務問題及解決方式，作為精算準則公報外之補充說明文件，包括因新興的技術或外在法規改變，而引起的實務問題，提供精算人員精算實作時可能遭遇案例參考及遵循方向。

所謂「保費不足準備金」，係指保險業對於保險期間尚未屆滿之有效契約或尚未終止之承保風險，並依據其未到期自留危險所計算現行提存之未滿期保費準備金，於考量未來預期之保費收入後，經測試不足以支應該有效契約或承保風險預期於未來所產生自留賠款與費用時，就其差額所提存之準備金。

於本研究計劃中提出預期成本法、現值法、期望投資收益法等，可作為評估是否需提存保費不足準備金及需提存準備金數額之參考。

本釋例之研究結果將可兼具理論與實務，建議交由中華民國精算學會公佈實施及作為監督、指導精算人員作業及行為之精算實務處理釋例。

關鍵詞：保費不足準備金、預期成本法、現值法、期望投資收益法

ABSTRACTION

The research plan intends to provide guidance to the actuaries with a practice to refer. Through focusing on the topics about how to estimate premium deficiency reserve, we mainly try to cross-exam the articles of CAS with the actuarial practice in Taiwan. After gathering the information, the practice note is written and revised several times into a solid one. The practice note proposes solutions to the problems that actuaries might encounter in the process of deciding premium deficiency reserve. This practice note also acts as a supplement of standard of practice. Another objective is to render guidance to the Actuarial Institute of the Republic of China that she could use to provide useful guidance to actuaries and the Insurance Bureau about determining premium deficiency reserve.

When the anticipated net losses, and other future costs exceed the recorded unearned premium reserve and any future installment premiums on existing policies, a premium deficiency reserve shall be recognized.

The research plan has suggested three approaches (including Expected Cost Approach; Present Value of Future Payments Approach and Expected Investment Income Approach) for actuaries' reference.

The final results of the standard of practice and provisions could be both theoretical and practical. We suggest that it should render guidance to the Actuarial Institute of the Republic of China that she could use to monitor her members and ascertain quality and legality of their works.

Keyword: Premium Deficiency Reserve ∙ Expected Cost Approach ∙ Present Value of Future Payments Approach ∙ Expected Investment Income Approach

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壹、前言

第一章 研究主旨

基於提供精算人員一致性之實務處理方式，於提存保費不足準備金時有所依據。在符合相關法律、精算實務處理原則及目前實務需求下，藉此研究計畫案，探討保費不足準備金之相關議題，經由彙整國內外精算實務經驗、條列成具體的實務處理釋例，以提供精算人員未來若依法需提存保費不足準備金時，可能遭遇案例及遵循方向。並供保險監理單位於查核時之參考，以及精算學會協助精算人員作業之準則，提昇其作業品質水準。

第二章 背景分析

「產險市場費率自由化時程計劃」自 91 年 4 月 1 日開始實施後，對於實施費率自由化，整體產險市場是否會因過度之價格競爭，造成保費收入不足以支付未來損失及費用之情形發生，主管機關及專家學者皆感關切。再者，鑒於近年來利率趨勢走低，對於壽險業高預定利率長年期保單之經營成本影響甚鉅，財政部於 91 年 12 月 24 日公佈之「保險業各種準備金提存辦法」第 16 條已規定壽險業需於特定情況下提存保費不足準備金。金管會保險局於 95 年 11 月 13 日舉辦「產、壽險業特別準備金相關問題之檢討」會議，會議上有關「保費不足準備金」部分，經與會人士討論，獲有「保費不足準備金係反應公司經營的情形，其提存應有一致之標準，故尚須由精算專業機構如中華民國精算學會訂定準則，供精算人員遵循辦理」之結論。本研究報告亦參考保險事業發展中心已完成之兩篇研究文章。

茲因精算學會已出版一篇準備金實務處理準則，而該準備金實務處理準則已包含保費不足準備金之精算實務準則，然許多保費不足準備金實作之細節部分，仍有待進一步釐清。鑒於實務所需，建議在配合精算學會現行之財產保險業精算實務處理準則下，針對保費不足準備金之議題，研訂保費不足準備金精算實務處理釋例，以供所有精算人員於保費不足準備金提存過程中，有一致性的案例可參考，並作為準備金實務處理準則之補充。

第三章 研究內容大綱

為提供精算人員於提存保費不足準備金時一致性的實務處理方式，本委託案之研究內容如下：

1. 各國保費不足準備金的相關規定：

蒐集並研究國外保險監理制度或法規與國外精算學(協)會之精算準則等對保費不足準備金之相關規定情形。

2. 保費不足準備金之實務處理原則或釋例草案：

針對我國在費率自由化下實施短期保險(除財產保險外，尚含產、壽險共同可經營之傷害險、健康保險或其相關之團體保險)保費不足準備金時，配合監理規範及相關資料庫建置情形，擬訂精算人員評估保費不足準備金所需遵循或參考之實務處理原則或釋例草案。

3. 其他應行配合事項及建議：

配合保費不足準備金之實施，提出(1)保費不足準備金法令規定建議草案、(2)其他如經驗資料庫或配套措施應具備之條款、(3)其他準備金提存調整之應行配合事項及建議。

第四章 研究方法及步驟

本研究計畫分四個階段完成，各階段之執行要項臚列於下：

(1)初步草擬：

首先，收集產險精算委員對精算實務處理上之建議，並參考國內外產險精算之保費不足準備金提存相關文獻，對相關概念進行整理與分析。最後完成釋例之初步草擬。

(2)開會討論：

透過精算學會產險精算委員會定期開會討論，凝聚委員彼此之間的共識，並據以修正內容。

(3)意見徵詢：

透過產險公會精算小組與業界溝通，凝聚委員彼此之間的共識，同時與精算學會壽險 AA 委員會代表討論及意見徵詢，並據以修正內容。

(4)期末報告：

九十六年九月中完成。

第五章 研究人員及分工配置、研究人員學、經歷、主持人及協（共）

同主持人參與政府委託研究計畫情形

(1) 計畫主持人

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經歷：「保險業簽證精算人員制度檢討－產險業評估再保險安排及
提存賠款準備金之精算準則與實務處理釋例」研究計劃主持人
「產險精算人員簽署保險商品之準則規範」研究計劃主持人
強制汽車責任保險精算及研究發展專案
簽證精算意見書範本制定、產險精算考試制度修訂
精算準則公報第二號 “準備金實務處理準則”
精算準則公報第一號 “費率釐訂實務處理準則”
強制汽車責任保險費率調整機制
商業火災保險危險費率修訂
Reliance National Insurance Company, USA 資深精算分析
師
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Cotton States Insurance Company, USA 精算分析師及電腦
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(2) 共同主持人

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中華民國核保學會正會員
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中華民國精算學會監事、產險精算委員會委員
保險事業發展中心產險費率自由化費率工作小組協同召集人
逢甲大學兼任助理教授級專業技術人員
經歷：財團法人保險事業發展中心 副總經理
統一安聯產物保險公司 協理/簽證精算人員
檢討產壽險業特別準備金相關問題研究計劃主持人
強制汽車責任保險精算及研究發展工作小組費率分組召集人
目前參與政府委託研究計畫情形：本研究計畫

(3) 研究員

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 資格：美國壽險精算學會副會員(ASA)
 中華民國精算學會正會員
 現職：新安東京海上產物保險公司精算風管群協理
 經歷：統一安聯產物保險公司協理，簽證精算人員
 目前參與政府委託研究計畫情形：本研究計畫

(4) 研究員

陳占晃－學歷：逢甲大學統計暨精算研究所碩士
 資格：中華民國精算學會副會員
 現職：富邦產物保險公司精算部代科長
 經歷：強制汽車責任保險精算研究發展小組
 目前參與政府委託研究計畫情形：本研究計畫

(5) 研究員

陳榮森－學歷：逢甲大學統計與精算研究所碩士
 資格：中華民國精算學會正會員
 現職：臺灣產物保險股份有限公司企劃部專案經理
 經歷：第一產物保險股份有限公司行銷部研發小組、富邦產物保險股份有限公司精算部
 目前參與政府委託研究計畫情形：本研究計畫

第六章 研究經費

各項研究經費依照「行政院金融監督管理委員會委託研究計畫經費編列標準表」編列如下，計畫總經費估約為新台幣伍拾貳萬元整。

項 目	金 額 (元)	說 明
一、研究人員經費	275,000	
研究主持人	80,000	研究主持人：\$16,000/月 x 1 人 x 5 個月
協同主持人	75,000	協同主持人：\$15,000/月 x 1 人 x 5 個月
研究員	120,000	研究員：\$8,000/月 x 3 人 x 5 個月
二、座談會出席費	220,000	\$2,000/人次 x 11 人 x 10 次
三、報告印製費	8,000	本項費用暫列，檢據核實報支。

四、雜支費	7,000	依一至三項金額總合百分之一點三九計列。 (包括影印費、會議通知、辦公文具、座談會茶水費及雜支等)。
五、行政管理費	10,000	以一至四項金額總合之百分之一點九六計。
六、經費合計數	520,000	

第七章 研究進度

- (1) 5/11 完成「保費不足準備金實務處理釋例」初稿。
- (2) 4/25~8/2 間召開九次產險精算委員會(含與壽險代表開會討論)及五次公會精算小組會議，分別開會討論，並修正內容。
- (3) 8/3 期中報告，會後參考專家學者之意見回覆作適當修改。
- (4) 8/4~9/13 三次產險精算委員會及四次公會精算小組會議中，再次徵詢各委員及各公司代表之意見，並據以修訂。
- (5) 9/26 期末報告，會後參考專家學者之意見回覆作適當修改。
- (6) 10/16~10/24 與精算學會壽險 AA 委員會代表討論及意見徵詢。
- (7) 10/26 完成修訂後期末報告。

貳、摘要或彙整各國（州）內容或精髓

第一章：各國(州)保費不足準備金之相關定義

法令(文章)名稱	保費不足準備金之相關定義
美國紐約州法令	<p>Accident & Health:A premium deficiency reserve is a reserve that is established when future premiums and current reserves are not sufficient to cover future claim payments and expenses for the remainder of a contract period. This reserve is in addition to claim reserves and contract reserves.</p> <p>Life :"Deficiency reserves" means the excess of minimum reserves calculated in accordance with the principles of section 4218 of the Insurance Law, as interpreted by this Part, over basic reserves.</p>
美國科羅拉多州法令	"Premium Deficiency Reserve" means, for the purpose of this regulation, a reserve established on the valuation date when, it is probable that, future premiums and current reserves are not sufficient to pay future claim payments and expenses for the remainder of the deficiency period. This reserve should be reviewed at least annually and adjusted as necessary.
美國肯塔基州法令	When the anticipated losses, loss adjustment expenses, commissions and acquisition costs, and maintenance costs exceed the recorded unearned premium reserve and any future installment premiums on existing policies, a premium deficiency reserve shall be recognized by a property and casualty insurer by recording an additional liability for the deficiency, with a corresponding charge to operations.
新加坡法令	"premium deficiency reserves" means the reserves for the expected loss on unexpired policies after taking into consideration all benefits, claims, claims adjustment expenses, acquisition cost, maintenance costs, and policyholders' experience participation, and shall be calculated net of reinsurance;

中國大陸法令	<p>保險公司在提取未到期責任準備金時，應當對其充足性進行測試。未到期責任準備金不足時，要提取保費不足準備金。</p>
AICPA 文章(PREMIUM DEFICIENCY RESERVES)	<p>The purpose of the premium deficiency reserve is to reflect a “probable unexpired portions of insurance policies in force as of the financial statement date. A probable loss exists if there is a premium deficiency relating to short duration [Note: e.g. property and liability] or long duration contracts. Insurance contracts shall be grouped consistent with the enterprise's manner of acquiring, servicing, and measuring the profitability of its insurance contracts to determine if a premium deficiency exists.</p>
CAS 文章(Considerations in the Calculation of Premium Deficiency Reserves)	<p>A simplistic calculation would be the unearned premium reserve, less "the sum of expected claim costs and claim adjustment expenses, expected dividends to policyholders, unamortized acquisition costs, and maintenance costs" relating to the unearned premium reserve.</p>

第二章：各國保費不足準備金之說明

美國：

非所有州之保險法規都有保費不足準備金之規定，有保費不足準備金規定者，例如紐約州、科羅拉多州及肯塔基州等。然美國 GAAP 會計原則於 1982 年 FAS 60 中要求保費不足準備金之提存(FAS 60 中有關保費不足準備金之定義原文如下：A premium deficiency shall be recognized if the sum of expected claim costs and claim adjustment expenses, expected dividends to policyholders, unamortized acquisition costs, and maintenance costs exceeds related unearned premiums.)，美國 SAP 會計原則亦於 2001 年 SSAP53 中開始要求此一準備金(SSAP 53 中有關保費不足準備金之定義原文如下：When the anticipated losses, loss adjustment expenses, commissions and other acquisition costs, and maintenance costs exceed the recorded unearned premium reserve, and any future installment premiums on existing policies, a premium deficiency reserve shall be recognized by recording an additional liability for the deficiency, with a corresponding charge to operations.)，然不論 GAAP 或 SAP 之相關文件，皆扼要簡述保費不足準備金之原則，未說明詳細之提存方式。實務上，保費不足準備金由各公司採合適之精算方法計算而得，並無一致之提存方式、計算表格或計算公式。各公司之精算人員可遵循或參考美國精算相關機構所出版之精算公報或文章，壽險長年期險種可參考如 ASOP No. 40、ASOP No. 42 精算公報。而短年期險種可參考如 AICPA 文章(PREMIUM DEFICIENCY RESERVES)或 CAS 文章(Considerations in the Calculation of Premium Deficiency Reserves)。

中國大陸：

於法規中規範提存未到期責任準備金時，應當對其充足性進行測試，若未到期責任準備金不足時，則需提存保費不足準備金，並無明確規範詳細計算方法，且截至目前，本研究小組並無取得任何針對精算人員所規範之保費不足準備金精算公報。

新加坡：

於法規中規範保費不足之定義(法令上保費不足準備金之定義原文如下："premium deficiency reserves" means the reserves for the expected loss on unexpired policies after taking into consideration all benefits, claims, claims adjustment expenses, acquisition cost, maintenance costs, and policyholders' experience participation, and shall be calculated net of reinsurance;)，並無明確規範詳細計算方法，而實務上，由各公司採合適之精算方法計算而得，且截至目前，本研究小組並無取得任何針對精算人員所規範之保

費不足準備金精算公報。

參、研究結果

第一章 目的、定義、適用範圍及法律限制

第一節 目的

本保費不足準備金實務處理釋例(以下簡稱本釋例)之目的，在於說明計算保費不足準備金時可能遇到之實務問題及解決方式，作為精算準則公報外之補充說明文件，包括因新興的技術或外在法規改變，而引起的實務問題，提供精算人員精算實作時可能遭遇案例參考及遵循方向。

第二節 定義

本釋例所謂「保費不足準備金」，係指保險業對於保險期間尚未屆滿之有效契約或尚未終止之承保風險，並依據其未到期自留危險所計算現行提存之未滿期保費準備金，於考量未來預期之保費收入後，經測試不足以支應該有效契約或承保風險預期於未來所產生自留賠款與費用時，就其差額所提存之準備金。

預期產生之費用一般包括理賠費用、佣金及代理、經紀人費用、其他招攬費用與一般費用等。一般費用係指除了佣金及代理、經紀人費用、營業相關稅金及其他招攬之業務費用外的業務及管理費用。

第三節 適用範圍

本釋例適用於財產保險業所經營之所有商品，及財產保險業與人身保險業兼營之一年期傷害險(一年期意外險)及一年期健康保險商品，但不含政策性保險及核能保險，前述政策性保險包含強制汽車責任保險及住宅地震保險，此外，若專業再保險業經營上述商品，亦適用本釋例。

第四節 法律限制

任何法律上或政府監理上對於保費不足準備金之要求與本釋例有所衝突時，精算人員仍應遵守法律或監理機關之規定。

第二章 保費不足準備金計算過程之應注意事項

第一節 收集資料

收集資料為計算準備金的第一步，而資料通常來自兩個單位：(1)業務單位與(2)財務會計單位，且大多需透過電腦資訊系統來產生相關的資訊。

精算人員所分析的資料主要係來自於公司內部，但是並不侷限於公司內部，精算人員必須透過了解公司的業務特色，選擇所需要的資料。受限於公司資訊系統所記錄的資料，若部分所需的資料並無法由公司資訊系統產生，而精算人員認為此一資料有助於準備金之計算，可以請公司以人工方式產生。公司外部之分析報告亦可做為參考資料之一，或是利用市場統計資料，配合公司的業務特色，加上適當之假設予以調整使用。

在分析公司所提供的的資訊之前，精算人員必須先與相關財務資料核對檢驗資料的正確性。若業務資訊與財務無法吻合而導致其無法使用，精算人員應在精算備忘錄中揭露。以下為準備金實務處理準則之規範：

各險準備金計提所採用之資料須檢核與財務報表及歷史資料的一致性與合理性。精算人員必須揭露計算預期損失所採用的資料是否與財務報表上的資料一致。若資料原本就不一致，或經過調整後造成資料不一致時，須作解釋。(89)

第二節 了解資料與業務的特色

每家公司的業務情況皆不盡相同，保費不足準備金計算的方法也會因為公司的業務結構與經營策略之不同而有所差異，甲公司所適用的計算方法並不一定適用於乙公司。因此在評估保費是否不足時，可先了解會影響公司賠款、費用支出與責任的事項。例如：

- 業務量與業務結構
- 損失率的穩定性
- 保險契約的特殊條件
- 已付(已決)賠款的速度改變
- 損失趨勢的變化
- 費用支出的方式與習慣

第三節 保險商品與會計險別的處理

各保險公司內部可能因業務統計需要而另有不同的險別分類，為符合相關法令規定，保費不足準備金之計算所採用的險別分類仍需以年度檢查報表所列的險別為依據。

精算人員在整理過去相關資料時，為增加資料的可信度，可將性質相似的險別予以合併，用以觀察過去的理賠及費用經驗，並將所發現的結果應用於合併前之各個險別。

第四節 選擇保費不足準備金的計算方法

在估算保費不足準備金之前，精算人員可以利用所蒐集的各種資料，選擇適當方法來估算保費不足準備金。本釋例特舉預期成本法、現值法與期望投資收益法等幾個常見的保費不足準備金之估算方法為例，於下一章另行說明。

估算保費不足準備金的方法並不以此處所列方法為限，精算人員可根據保費不足準備金之意涵，參考國外相關規定或其他各國精算學會出版之書籍及論文(如美國產險精算學會)等，並根據所蒐集的資料，選擇合適的估算方法。所使用之方法應注意前後期間之一致性，若衡量實際情況確實有改變之必要，精算人員應於精算意見書中揭露。

第五節 合理的測試與選定最後的結果

依不同估計方法所估算出來的保費不足準備金只是一組數學公式的運算結果，是無法據此判斷結果是否合理與正確，因此最後的結果還必須經由精算人員依據不同的情境作合理的測試與判斷，用以評估所計算的保費不足準備金是否合適與合理。

依公式計算所得之結果經測試超出合理範圍內時，精算人員須重新檢視計算過程是否失當，如經檢視後其結果仍不於合理範圍內，精算人員可以依據自己的判斷選擇一個合適且合理的結果並解釋此一差異。

在保費不足準備金之計算過程中，精算人員可以選擇許多係數及假設，例如：再保比例、預估損失率、投資報酬率或費用支出等。精算人員可以參考相關統計分析及自身經驗作為選擇及假設之依據。不論是係數之選擇及假設，皆應注意前後期間之一致性，若衡量實際情況確實有改變之必要，亦應於精算備忘錄中揭露。

參考資料之正確性與可預測性將影響精算人員所選擇之係數與假設是否合理，因此

精算人員必須針對一些會對保費不足準備金計算結果有重大或不確定影響之係數與假設，進行敏感度測試。保費不足準備金的合理範圍也會因假設的不確定性及其影響程度不同而有所差異，必要時精算人員應於精算備忘錄中說明。

第三章 保費不足準備金的估算方法

依第一章「保費不足準備金」之定義，此一準備金係指當未滿期保費準備金經測試小於所對應之有效契約或承保風險的預期「未來」之賠款與費用時，必須就其差額所提存之準備金。目前未滿期保費準備金計算非以危險保費(純保費)為基礎，且佣金及招攬成本已於簽單時認列為費用，並未列為遞延資產，故過去已發生並已認列之費用，就定義而言則無需納入保費不足準備金之分析過程。

就保費不足準備金之定義與國內現行之保險法令及會計實務而言，於分析保費不足準備金之過程中，無需考量佣金及招攬成本等已於簽單時認列之費用。本章之估算方法與範例皆以國內現行保險法令及會計實務為前提說明之，並假設除賠款、理賠費用及一般費用外無其他之預期費用。

本釋例共介紹預期成本法、現值法及期望投資收益法等三個方法，其中第一種方法係參考國外常用之綜合比率法，並考量國內現行之保險法令及會計實務所產生之作法，而後兩種方法則應用現金流量分析，同時須引用損失賠付發展模型等資料，若精算人員可取得相關資料時，則可考量使用此兩種方法。本章計算範例中所引用的幾個重要因子，進一步說明如下：

(1)預期賠款與理賠費用之估計

精算人員可由過去數年之理賠經驗，並考量異常巨額賠案及損失發展等因素後估計之，並不侷限於本節範例中之估計方式。其中，關於預期賠款與理賠費用之相關估計方式，可參考中華民國精算學會所發佈之財產保險業「準備金實務處理準則」及「賠款準備金處理釋例」。

(2)預期一般費用

本章範例採用的預期一般費用，係以範例中 2000 年的一般費用率乘上未滿期保費準備金而得。精算人員在估算未屆滿契約或未終止風險之預期一般費用時，可檢視公司保險費用之相關資料。例如，財產保險業可參考中華民國精算學會所公佈之財產保險業「保險費用表填報釋例」中一般費用所涵蓋之項目，並可藉由分析業務處理流程，估計維持未屆滿契約或未終止風險之成本，其中可能包含：人員薪資及資訊處理費用等費用項目。

(3)利率的影響

在本章中，部分範例並未考量利率因子對於未滿期保費、預期賠款支出、預期一般費用的影響。精算人員可依據國內外精算原理、精算學會公佈之精算實務處理準則及實務經驗作合理判斷，決定是否於估算保費不足準備金時，增加利率影響的因素。其中，利率因子的計算，財產保險業可參考中華民國精算學會所公佈之財產保險業「保險費用

表填報釋例」中有關準備金投資報酬率之規定。

第一節 預期成本法

若保險法令及會計實務係採收入與費用配合原則，允許招攬費用認列為遞延資產，在考量準確性與方便性，一般國際精算實務係採用綜合比率作為是否須提存保費不足準備金之初步判斷依據。

以國內現行之保險法令及會計實務，並無招攬費用認列為遞延資產之規定，亦即在承保期初，佣金及代理、經紀人費用與其他招攬費用等費用，均已完全認列，故若以綜合比率中的費用率作為估算未來預期費用之依據，相關費用有重複估算之虞。

依據保費不足準備金之定義，係採「預期賠款與費用」之概念估計之，根據國內現行之保險法令及會計實務，未來預期費用並不包括佣金、經紀人費用與其他招攬費用等相關已經發生且認列之費用，故本釋例不採綜合比率，而改採「預期成本」之概念估算保費不足準備金。

以下為一簡單估算保費不足準備金的範例，精算人員在估算公司所需提列之保費不足準備金時，可根據公司內部所提供之資料，佐以合理的假設，適時地調整相關因子來進行估算。

預期成本法	
(1) 2000 年滿期保費	350,000
(2) 2000 年已發生賠款與理賠費用 ^{註1}	339,500
(3) 2000 年損失率	97%
=(2)/(1)	
(4) 2000 年底未滿期保費準備金	180,000
(5) 預期賠款與理賠費用	174,600
=(3)×(4)	
(6) 預期一般費用率	5%
(7) 預期一般費用	9,000
=(4)×(6)	
(8) 預期成本	183,600
=(5)+(7)	
(9) 保費不足準備金	
=(8)-(4)，若<0 則為 0	
	3,600

預期成本法

註 1：已發生賠款與理賠費用含當年度 IBNR 之變動數。

所提列的未滿期保費準備金不足以支付未來的預期成本，故須提列保費不足準備金 3,600。

本節範例中係以 2000 年滿期損失率乘上 2000 年底未滿期保費準備金，作為未屆滿契約或未終止風險之預期賠款與理賠費用。採用未滿期保費準備金作為計算基礎時，應注意此一未滿期保費準備金所對應之簽單費率水準與所引用理賠經驗之各年費率水準是否相當，若有所不同，則應予適當之調整。實務上損失率有各種不同之計算基礎，應由精算人員自行判斷選擇何種基礎，較能與未滿期保費準備金相互配合，反映未屆滿契約或未終止風險之損失。而上述不同之計算基礎可參考「費率釐訂實務處理準則」第二章第二節 19.資料統計基礎。

第二節 現值法

若公司可提供更多更詳盡的資料，例如：保單年度制之保費及損失賠付發展模型等資料時，於衡量成本效益與準備金適足性之情況下，可另外佐以合理的假設，選擇以較複雜的估算方法來評估保費不足準備金。本章第二節及第三節係以下列資料作為解說範例：

富國保險公司 2000 年保單年度制保費資料

	滿期保費	未滿期保費	保費收入
金額	220,000	180,000	400,000
預估損失率	97%	97%	97%
預期賠款與理賠費用	213,400	174,600	388,000

富國保險公司損失賠付發展模型

2000 年滿期保費			2001 年滿期保費	
賠付年度	賠付比例	賠付金額	賠付比例	賠付金額
2000	40.0%	85,360		
2001	30.0%	64,020	40.0%	69,840
2002	15.0%	32,010	30.0%	52,380
2003	8.0%	17,072	15.0%	26,190
2004	5.0%	10,670	8.0%	13,968
2005	2.0%	4,268	5.0%	8,730
2006			2.0%	3,492

富國保險公司損失賠付發展模型

2000 年滿期保費			2001 年滿期保費	
賠付年度	賠付比例	賠付金額	賠付比例	賠付金額
合計	100%	213,400		174,600

上表中隱含下列假設：

- (1) 所有簽發之保單為一年期，並以保單年度制作為評估基礎，
- (2) 於財報或評估日可將保費收入合理拆分為已滿期及未滿期兩部分。
- (3) 賠款金額係依據(精算上)合理的保費收入及預估損失率推估而得。
- (4) 有足以推估未來理賠狀況的損失賠付發展模型。

本節介紹現值法(Present Value of Future Payments Approach)，其基本的概念係將未來現金流量貼現到評價的時點上，以評估同時間的準備金充分與否。實務上所遭遇到的情況可能比本釋例的範例複雜，精算人員可以根據所獲得的資料加上自身的判斷，以獲得合適的估算過程，以下範例僅是在簡單的假設情境下，來說明現值法的精神。

以下計算表以「有效契約未滿期部分」，推估保單年 2000 年之未滿期保費未來的賠款與理賠費用以及一般費用(同第一節範例，假設為 5%，第二年及其後年度支出一般費用總數為未滿期保費準備金的 5%，並以賠款金額為權重分配於各年度)，並以折現(假設無風險利率 2%)之方式來估算保費不足準備金。

<u>現值法計算表</u>					
年度	預期賠款與 理賠費用	預期一般 費用 5%	預期成本	折現因子 2%	預期成本 現值
2001	69,840	3,600	73,440	0.9901	72,714
2002	52,380	2,700	55,080	0.9707	53,468
2003	26,190	1,350	27,540	0.9517	26,210
2004	13,968	720	14,688	0.9330	13,704
2005	8,730	450	9,180	0.9147	8,397
2006	3,492	180	3,672	0.8968	3,293
小計	174,600	9,000	183,600		177,789

依上表之計算結果，保單年 2000 年之有效保費未滿期部分的預期成本現值為 177,789。

保費不足測試的結果如下表所示：

保費不足測試

(1)未滿期保費(as 2000/12/31)	180,000
(2) 預期成本現值	177,789
(3)保費不足準備金	0
=(2)-(1)，若<0 則為 0	

針對保單年 2000 年所提列之未滿期保費(180,000)，其未來預期成本之現值(177,789)，故收入與支出的差額為 2,211=180,000-177,789；所提列的未滿期保費預估能支應未來之支出，故不須提列保費不足準備金。

第三節 期望投資收益法

期望投資收益法(Expected Investment Income Approach)係考量未來年度的收入與支出，同時考量其累積餘額之投資收益，是以現金流量之觀念來評估保費不足準備金。

以「有效契約未滿期部分」為基礎(此處未考慮決算當時仍有未滿保單年度之預期收入(如月繳件)之狀況)，計算未來投資收益如下：

預估投資收益計算表

年度	期初 餘額	預期賠款與 理賠費用	預期一般 費用	期末餘額(未含 投資收益)	投資收益	期末餘額
	(1)	(2)	(3)	(4)=(1)+(2)+(3)	(5)=[(1)+(4)]/2*2%	(6)=(4)+(5)
		97.0%	5%		2.0%	
2001	180,000	-69,840	-3,600	106,560	2,866	109,426
2002	109,426	-52,380	-2,700	54,346	1,638	55,984
2003	55,984	-26,190	-1,350	28,444	844	29,288
2004	29,288	-13,968	-720	14,600	439	15,039
2005	15,039	-8,730	-450	5,859	209	6,068
2006	6,068	-3,492	-180	2,396	85	2,481
合計		-174,600	-9,000		6,081	

上述所列之範例，其假設情境與第二節相同，其中，假設之投資收益率為 2%，一般費用為未滿期保費準備金的 5%，並以賠款金額為權重分配於各年度。而投資收益係以期初與期末之平均餘額計算而得。最後，次年度期初餘額即為上年度期末餘額加上投資收益，依此可計算往後所有年度現金流量及其投資收益。並以所得之 2001-2006 年總投資

收益(6,081)用於計算保費不足準備金提存測試。

保費不足準備金提存測試之結果如下表所示：

保費不足測試		
(1)未滿期保費(as 2000/12/31)		180,000
(2)預期賠款及理賠費用	97.0%	174,600
(3)預期一般費用		9,000
(4). 預期成本		183,600
=(2)+(3)		
(5)預估投資收益		6,081
(6)保費不足測試		2,481 > 0
=(1)+(5)-(4)		

針對 2000 年所提列之未滿期保費(180,000)，其未來支出有預期賠款及理賠費用(174,600)，預期一般費用(9,000)，同時預期投資收益為(6,081)，故收入與支出的差額為 2,481=(180,000+6,081)-(174,600+9,000)；所提列的未滿期保費預估能支應未來之支出，故不須提列保費不足準備金。

上述範例若經以上測試後，須提存保費不足準備金，則估算 2000 年所應提存之保費不足準備金，可利用第二節之方法，來估算所應提存之金額。

第四節 人身保險業應注意事項

人身保險業與財產保險業兼營之商品計有一年期傷害險(一年期意外險)及一年期健康險，人身保險業在評估上述之兩項保險商品之保費不足準備金所應提存金額，應遵循人身保險業之相關法令規定，且得採用人身保險業簽證精算人員實務處理原則，如人身保險業簽證精算人員實務處理原則之第二章第二節 2.2.1「如該短期險無利率風險(如一年定期壽險)，可利用損失率法評估短期險需不需要額外準備金，即所收取之保費是否足夠承擔風險。」以及第七章第三節(3)(d)i「針對一年期傷害險及一年期健康險，若所提存之未滿期保費準備金加計考量未來預期之保費收入後，不足以支應未來所產生的預期理賠支出與費用時，應就其差額提存保費不足準備金。其方法可參考第二章 2.2.1 短期險負債評價。」。

第四章 常見問題與建議

民國 96 年

【問題 1】為什麼國外部分文章於討論保費不足準備金時，需考量遞延費用，為何本釋例之方法皆未提及？

【回答 1】依保費不足準備之定義，本項準備金係為彌補未到期風險準備之不足，但目前國內之保險法令及會計實務並不允許招攬費用之遞延，相關費用皆已於簽單之初認列，故未到期風險僅有解約退費、賠款支出及一般費用等，故不需考量遞延費用。

【問題 2】現行保費不足準備金之相關規定有那些？

【回答 2】國內目前於「保險業各種準備金提存辦法」第 16 條中，對於人身保險業所經營保險期間超過一年之人壽保險、健康保險及年金保險有一保費不足特別準備金之規定，其係因責任準備金修正制可能造成用以提存責任準備金之純保費高於簽單保費，進而造成責任準備金提存不足之情形，故另行訂定補足此一差額之規定。目前對於財產保險業並無保費不足準備金之法令規定，但於產壽險業兼營之傷害保險項下之團體傷害保險有一性質相似之規範，其規定保險業於經營一年期團體保險時若實收保費低於法定保費時，需以法定保費提存準備金，但此一規定與保費不足準備金之定義有所不同，因此與依精算方法所估算之保費不足準備金亦有所差異。另目前少數財產保險業所經營之商品，於計算說明書中亦載明類似之規定，例如：旅行業責任保險及旅行業履約保證保險等。

【問題 3】目前一年期團體保險及財產保險業之旅行業責任保險和旅行業履約保證保險於計算未滿期保費準備金時，已有類似保費不足準備金之作法，其規定若與本釋例有所衝突時，應如何處理？

【回答 3】在現行相關法規及報主管機關所提列之未滿期保費準備金計算公式的規定尚未改變之情形下，仍須先按規定計算該業務之未滿期保費準備金，而後按精算方法來分析該業務未來的支出(例如理賠與一般費用等)，再評估保費不足測試，若所提列之未滿期保費準備金(含依法令增提部分)不足以支付未來的支出，則仍須再提存保費不足準備金。

【問題 4】計算保費不足準備金時，是以總保費為基礎，或以自留保費為基礎計算？

【回答 4】精算人員得以擇一計算保費不足準備金，惟以自留保費為計算基礎時，應考量再保險安排之影響。

【問題 5】若於計算保費不足準備金時，存在分期繳費(例如，一年期保險，保戶選擇月繳)或保證續保(例如，一年期健康保險)之情形，應如何處理？

【回答 5】針對分期繳費商品所提存之保費不足準備金，依據其定義意涵，需考量未來預期收入與未來預期支出的差額，若所提存之未滿期保費準備金於考量其未來預期收入後仍不足以支付其差額，則需提存保費不足準備金。一年期健康險商品亦循一般情況處理。

【問題 6】本釋例第三章介紹三種保費不足準備金提存估算方法之優缺點為何？

【回答 6】本釋例所列之三種方法，其特色整理如下：

方法	特 色
預期成本法	簡單易懂，但未考慮時間價值。
現值法	考量時間價值，但須考量如何決定折現率，同時需額外資訊，如：損失賠付發展模型。
期望投資收益法	考量時間價值，但須考量如何決定收益率，同時需額外資訊，如：損失賠付發展模型。

【問題 7】本釋例第二章第五節第二段「依公式計算所得之結果經測試超過合理範圍，…精算人員可以依據自己的判斷選擇一個合適且合理的結果並解釋此一差異」之敘述，意指在經再次測試、檢視後，如結果仍未能落於合理範圍時，精算人員可僅就不合理之結果予以說明即可，或需調整成合理之結果後再加以說明？

【回答 7】本段主要說明，如經第一次測試之後，其結果如超過合理範圍，應檢視計算過程是否失當，如果計算過程失當(例如計算錯誤等等)，則應修正計算過程，如果計算過程並無失當，但測試結果仍超過合理範圍，則可能是受限於資料品質或是其他因素所致，此時精算人員可以依據自己的判斷選擇一個合適且合理的結果並解釋此一差異。

【問題 8】按險別或是商品別計算保費不足準備金？

【回答 8】本釋例在第二章第三節主要說明，「各保險公司內部可能因業務統計需要而另有不同的險別分類，為符合相關法令規定，保費不足準備金之計算所採用的險別分類仍需以年度檢查報表所列的險別為依據。」

保費不足準備金係依據險別來提存，其主要原因，除了為符合相關法令規定，另外，未滿期保費準備金亦依據險別提存，產險賠款非固定值，風險因素眾多，長尾業務之 payment pattern 需累積類似風險之商品方能形成。

【問題 9】現值法之「貼現率」與期望投資收益法之「投資報酬率」之取用準則為何？

【回答 9】因各家公司之投資報酬率不同，故「投資報酬率」難有一致性之標準，除非監理機關有所規範；而於產險業，建議「投資報酬率」採較保守之計算方法，可參考「保險費用表填報釋例」中有關準備金投資報酬率之規定。

肆、其他應行配合事項及建議

一、保費不足準備金相關法令研究與建議

(一) 「保險法」新修訂之相關規定已確立法源依據

依我國最新修訂且已於 96 年 7 月 18 日公告之保險法第十一條規定：「本法所定各種準備金，包括責任準備金、未滿期保費準備金、特別準備金、賠款準備金及其他經主管機關規定之準備金。」，其中該條文內容雖無獨立列示出「保費不足準備金」之規定。但有關「其他經主管機關規定之準備金」之新增文字內容部份，即已明確規範了主管機關得要求保險業增提其他準備金之法源依據。

(二) 「保險業各種準備金提存辦法」應行修訂之建議事項

在現行保險法之相關子法中，未來與財產保險業「保費不足準備金」有關連之重要法令，應以「保險業各種準備金提存辦法（以下簡稱提存辦法）」之影響最為重大，故就現行規範及未來應行修訂之建議事項，說明如下：

1. 現行提存辦法有待明確規範

回顧現行提存辦法中，具體而言，除第十六條有提及人身保險業對於保險期間超過一年之人壽保險、健康保險及年金保險業務，依相關規定下需提存「保費不足特別準備金」外，其餘並未明確訂定有財產保險業或財產保險業與人身保險業兼營之險種（即指傷害保險及一年期健康保險）之「保費不足準備金」相關規範。而有關現行提存辦法第十六條之規定內容如下：

人身保險業對於保險期間超過一年之人壽保險、健康保險及年金保險業務，自中華民國九十年一月一日起訂定之契約，其簽發之保險費較其依第十條規定計算責任準備金之保險費為低者，除應依第十條規定提存責任準備金外，並應將其未經過繳費期間之保險費不足部分提存為保費不足特別準備金。

人身保險業除依前項規定提存特別準備金外，得基於特殊需要加提特別準備金；其加提與沖減方式及累積限額應先報經主管機關核准。

其中，本提存辦法所提存之「保費不足特別準備金」係屬於特別準備金的一種性質。

2. 美國相關法令對「保費不足準備金」適用範圍之參考內容

有關美國之相關法令規定，目前了解在肯塔基州於「304.6-180 Deficiency reserve-Recognition of premium deficiency reserve」之第二段提及，有關財產保險業之「保費不足準備金」之規定重點內容為：

When the anticipated losses, loss adjustment expenses, commissions and acquisition costs, and maintenance costs exceed the recorded unearned premium reserve and any future installment premiums on existing policies, a premium deficiency reserve shall be recognized by a property and casualty insurer by recording an additional liability for the deficiency, with a corresponding charge to operations.

Commission and other acquisition costs need not be considered in the premium deficiency analysis to the extent they have previously been expensed. For purposes of determining if a premium deficiency exists, insurance contracts shall be grouped in a manner consistent with how policies are marketed, serviced, and measured.

按其原文之內容重點為：

當預期賠款、理賠費用、佣金及招攬成本與營運費用超過已入帳之「未滿期保費準備金」及任何已存在保單未來之分期保費收入時，財產保險業應藉由反應此一不足情形增加其負債之方式認列「保費不足準備金」。以前已支出之佣金及其他招攬成本中已認列為費用之部份，則不需納入保費不足準備金之分析範圍內。

3. 我國現行提存辦法應行修訂之建議事項

依前述所蒐集之保費不足準備金相關法令規定，可了解美國（以肯塔基州為例）及其他各國係考量將「保費不足準備金」作為彌補未到期責任之準備金不足時之增額準備金。

因此，擬建議主管機關得依新修訂之保險法第十一條規定，於現行「保險業各種準備金提存辦法」中，增訂提存「保費不足準備金」之相關規定，並提供下列兩種應行修訂之建議方案，可擇一考量：

方案一：增訂獨立之提存「保費不足準備金」相關規定

- (1) 考量於現行提存辦法第九條與第十條之間，獨立增列一條提存「保費不足準備金」之相關規定，亦即保費不足準備金應獨立於現行責

任準備金、未滿期保費準備金、特別準備金與賠款準備金等提存範圍之外

- (2) 有關「保費不足準備金」之提存範圍，建議以採用上述美國肯塔基州之相關法令規定為主要概念，並修改部份文字內容，其即為：

「保費不足準備金」，係考量財產保險業對於保險期間尚未屆滿之有效契約或尚未終止之承保風險，並依據其未到期自留危險所計算現行提存之未滿期保費準備金，於考量未來預期之保費收入後，經測試不足以支應該有效契約或承保風險預期於未來所產生自留賠款與費用時，就其差額所提存之準備金。

預期產生之費用一般包括理賠費用、佣金及代理、經紀人費用、其他招攬費用與一般費用等，必要時，得考慮利率對於保費不足準備金的影響。一般費用係指除了佣金及代理、經紀人費用、營業相關稅金及其他招攬之業務費用外的業務及管理費用。

註：上述保費不足準備金之提存範圍，亦將列為中華民國精算學會於未來訂定保費不足準備金實務處理釋例中，定義「保費不足準備金」之主要參考依據

- (3) 財產保險業應每年檢測及評估各險「保費不足準備金」是否有提存之需，且當年度所提存之數額得於次年年底收回
- (4) 提存辦法修訂之建議草案：

建議修訂條文	現行條文	說明
<p>第 x 條</p> <p>財產保險業對於保險期間尚未屆滿之有效契約或尚未終止之承保風險，依據其未到期自留危險所計算現行提存之未滿期保費準備金，於考量未來預期之保費收入後，經測試不足以支應該有效契約或承保風險預期於未來所產生自留賠款與費用時，就其差額所提存保費不足準備金。</p> <p>前項準備金之提存方式，</p>	無	<p>1. 新增條文</p> <p>2. 中華民國精算學會應制定相關「保費不足準備金實務處理釋例」，以供主管機關規範提存方式之參酌。</p>

建議修訂條文	現行條文	說明
得由保險業精算人員依主管機關指定或同意之方式計提，且應於次年度決算時收回，再按當年度實際檢測及評估結果，重新計提。		

方案二：合併於現行「未滿期保費準備金」之提存範圍內

- (1) 考量將「保費不足準備金」合併於現行「未滿期保費準備金」之提存範圍內。
- (2) 有關「保費不足準備金」之提存範圍，仍建議採用上述美國肯塔基州之相關法令規定為主要概念，並修改及增列部份文字內容，其即為：

財產保險業對於保險期間尚未屆滿之有效契約或尚未終止之承保風險，依據其未到期自留危險所產生之預期自留賠款與費用等合計金額，經測試已超過原估算提列之「(調整前)未滿期保費準備金」及任何已存在保單未來之分期保費收入時，財產保險業應就此一保費不足之情形，需增提「保費不足準備金」。同時，就前述差額所增提之保費不足準備金部份，應併入「調整前滿期保費準備金」之數額中，合計產生「調整後未滿期保費準備金」。

前項預期產生之費用一般包括理賠費用、佣金及代理、經紀人費用、其他招攬費用與一般費用等，必要時，得考慮利率對於保費不足準備金的影響。一般費用係指除了佣金及代理、經紀人費用、營業相關稅金及其他招攬之業務費用外的業務及管理費用。

- (3) 財產保險業應每年檢測及評估各險「保費不足準備金」是否有提存之需，並計入「未滿期保費準備金」中增列提存，且當年度所增列提存之保費不足準備金數額，得於次年年底併同現行未滿期保費準備金之收回方式辦理。
- (4) 提存辦法修訂之建議草案：

建議修訂條文	現行條文	說明
第 x 條	無	1. 新增條文

建議修訂條文	現行條文	說明
<p>財產保險業對於保險期間尚未屆滿之有效契約或尚未終止之承保風險，依據其未到期自留危險所產生之預期自留賠款與費用等合計金額，經測試已超過原估算提列之「(調整前)未滿期保費準備金」及任何已存在保單未來之分期保費收入時，財產保險業應就此一保費不足之情形，需增提「保費不足準備金」。同時，就前述差額所增提之保費不足準備金部份，應併入「調整前未滿期保費準備金」之數額中，合計產生「調整後未滿期保費準備金」。</p> <p>前項保費不足準備金之提存方式，得由保險業精算人員依主管機關指定或同意之方式計提，且當年度所增列提存之保費不足準備金數額，得於次年年底併同現行未滿期保費準備金之收回方式辦理。</p>		<p>2. 中華民國精算學會應制定相關「保費不足準備金實務處理釋例」，以供主管機關規範提存方式之參酌。</p>

4. 財產保險業與人身保險業兼營之險種

目前有關產壽險兼營之險種為傷害保險及一年期健康保險，其主要係依人身保險業之提存規定辦理，因此除考量採用前述「方案一」或「方案二」之擇一內容外，亦需於現行提存辦法中，再增訂下列相關條文與內容，修訂之建議方案如下：

方案補充：增訂條文以補述「方案一」或「方案二」適用於兼營險種之相關規定

- (1) 於現行提存辦法第十八條與第十九條之間，獨立增列一條適用產壽險業兼營之傷害保險及一年期健康保險有關提存「保費不足準備金」之相關規定，亦即延續補充說明前述「方案一」或「方案二」之相關內容，其增訂條文與內容建議如下：

有關財產保險業與人身保險業兼營之傷害保險及一年期健康保險，其保費不足準備金提存之相關規定，應遵照第 x 條（即前述「方案一」或「方案二」之規定條次）之規定辦理。

- (2) 對於現行提存辦法第十六條之「保費不足特別準備金」相關規定，因恐易產生法令名稱有重疊或混淆之慮，擬建議人身保險業需重新評估對經營其他險種之影響性。

- (3) 提存辦法修訂之建議草案：

建議修訂條文	現行條文	說明
第 y 條 有關財產保險業與人身保險業兼營之傷害保險及一年期健康保險，其保費不足準備金提存之相關規定，應遵照第 x 條之規定辦理。	無	1. 新增條文 2. 補述「方案一」或「方案二」適用於兼營險種之相關規定 3. 第 x 條係指前述「方案一」或「方案二」之規定條次。

(三) 主管機關行政函釋應行修訂之建議事項

另對於主管機關已頒布之行政函釋中，可能會影響未來實施「保費不足準備金」相關規定之部份，建議應行修訂行政函釋之事項如下：

1. 廢除特定產險商品須遵照特定之準備金提存規定的行政函釋

建議方案：廢除特定產險商品須遵照「金管保二字第 09402075951 號」與「金管保二字第 09402075952 號」行政函釋所訂定之各種準備金提存規定，

並應回歸適用該特定商品所屬險別之保費不足準備金提存辦法

說明：

- (1)有關中華民國 94 年 8 月 2 日行政院金融監督管理委員會金管保二字第 09402075951 號之行政函釋，其要旨為規範「旅行業責任保險」提存各種準備金之保費收入計算基礎；
即若實收保費高於主管機關規定之預定費率時，前項保費收入應依實收保費基礎計算之；反之，若實收保費低於主管機關規定之預定費率時，則前項保費收入應依主管機關規定之預定費率基礎計算之。
- (2)有關中華民國 94 年 8 月 2 日行政院金融監督管理委員會金管保二字第 09402075952 號之行政函釋，其要旨為規範「旅行業履約保證保險」提存各種準備金之保費收入計算基礎；
即若實收保費高於主管機關規定之預定費率時，前項保費收入應依實收保費基礎計算之；反之，若實收保費低於主管機關規定之預定費率時，則前項保費收入應依主管機關規定之預定費率基礎計算之。

上述兩行政函釋，係規範財產保險業就該兩項個別商品須以主管機關規定之預定費率，做為提計各種準備金之依據，但其性質即為保費不足準備金之提存範圍，故建議配合「保費不足準備金」提存辦法之實施，得考量廢除上述兩行政函釋之規範，並就該兩項特定商品，應回歸適用其所屬險別之保費不足準備金提存辦法。

2. 修訂一年期團體保險責任準備金提存之行政函釋，將團體傷害保險與團體健康保險回歸於前述兼營險種「方案補充」提存辦法之適用

建議方案：有關一年期團體傷害保險與一年期團體健康保險之責任準備金提存部份，應自「台財保字第 852367814 號」行政函釋規定中刪除不適用，且應回歸適用前述兼營險種之保費不足準備金提存辦法

說明：

有關中華民國 85 年 7 月 25 日財政部台財保字第 852367814 號函之行政函釋，其要旨為規範「一年期團體保險（含一年期團體傷害保險與一年期團體健康保險）」提存各種準備金之保費收入計算基礎；
即據以提存一年期團體保險各種責任準備金之保險費收入，若實收保費大於主管機關規定計算之保險費收入，依實收保費收入計算；若實收保費收入小於規定計算之保險費收入，應依規定計算之保險費收入…。

本項行政函釋之規範與前述特定產險商品須遵照主管機關之規範類似，但其性質

即為保費不足準備金之提存範圍。故建議配合「保費不足準備金」提存辦法之實施，得考量將有關一年期團體傷害保險與一年期團體健康保險之責任準備金提存部份，應自「台財保字第 852367814 號」行政函釋規定中刪除不適用，且應回歸適用前述兼營險種之保費不足準備金提存辦法。

二、 保費不足準備金對現行危險變動特別準備金之影響評估與建議

自 91 年 4 月 1 日開始實施「產險市場費率自由化時程計劃」後，主管機關、產險業者及許多專家學者等，對產險市場開放費率自由化，是否會造成過度之價格競爭，直接衝擊各保險公司之財務清償能力，皆存有相當之憂慮。因此，除研擬增提「保費不足準備金」之可行性外，亦應檢視及評估其對現行各種準備金提存金額之影響程度或相互間的關連性。

（一） 保費不足準備金對危險變動特別準備金之影響評估與建議

檢視現行危險變動特別準備金提存規定與本研究報告前述擬建議提存「保費不足準備金」之各項方案。本報告擬就下列三方面，先做一分析比較：

（1） 提存目的

基本上，「危險變動特別準備金」之提存目的，係為穩定保險公司年度間之經營成果，避免因若干巨額或累積性的異常損失造成財報損益巨幅波動。故概念上危險變動特別準備金係於實際賠款低於預期賠款的年度提列某一盈餘數額做為準備，以供未來年度因經營成果超出預期不良時，得以調節虧損之用。

另「保費不足準備金」之提存目的，則考量現行未滿期保費準備金之提存計算需依據「簽單保費」為基礎。今若保險業處於價格激烈競爭之市場時，往往因簽單保費之費率水準不足，間接影響所提存之未滿期保費準備金可能不足以支應未來保險賠款及營運成本之支出，故保費不足準備金提存目的係在於每年重新測試簽單保費之費率水準後，依實際評估情形填補未滿期保費準備金可能產生之提存不足情形。

（2） 提存性質

危險變動特別準備金性質上係屬於因應經營成果超出預期損益之「事故前」準備金之一種；保費不足準備金則考量填補未滿期保費準備金可能產生提

存不足之情形，故性質上較偏向於應需提列之「未滿期責任」準備金之一種，而應非屬於「事故前」準備金性質。

(3) 提存方式

危險變動特別準備金係依據現行提存辦法之規定計提，且提存後其數額有持續累積效果，需待未來實際損失情況不良或已達到提存上限時，方可依規定沖減或收回處理。

保費不足準備金之提存方式，依本報告前述建議方案，基本原則係為每年收回前一年之提存金額，再依當年之評估結果重新計提。因此，保費不足準備金之提存數額應不具有累積性。

綜合上述分析，可知「危險變動特別準備金」及「保費不足準備金」並不存有相互取代性。但另一方面，按保險法於今（96）年7月18日新修訂之第145條之1規定，保險業之法定盈餘公積提存比例由百分之十調升至百分之二十，且回顧近幾年來整體產險業之獲利情形，預估法定盈餘公積於未來幾年之累積速度將有所增加，並可能直接提昇了保險業之清償能力。

再者，IFRS 4 已於2004年3月公布，歐盟亦於同年11月公布自2005年起開始實施，目前國內有關IFRS 4之相關規定，正由會計研究發展基金會研議中。有關IFRS 4之主要重點為保險業財務報表之負債科目中，不能再提存「事故前準備金」，根據「保險合約之會計處理原則」(IFRS4)草案第48點，「資產負債表非屬有效之保險合約，不應將其未來可能發生之賠款認列為負債(如巨災準備、平穩準備之負債)」，現行重大事故特別準備金及危險變動特別準備金按IFRS4規定不應認列為負債。因此，對於現行「危險變動特別準備金」之規定，是否需重新檢視或修訂其功能定位，亦或研擬其他準備金提存替代方案，以期符合未來保險監理之需。

因此，就整體考量產險市場費率自由化之實施、法定盈餘公積提存比例之提高及IFRS 4之影響等重要因素下，均對產物保險業者有所衝擊，為使產物保險業者能有所準備，減緩對產物保險公司的影響，且配合未來保險合約之會計處理原則，對於前述所提出之「研擬其他準備金提存替代方案」，擬建議以增提「保費不足準備金」之方式，逐年取代「危險變動特別準備金」之部份功能與定位。

(二) 建議方案對產物保險公司影響之試算評估

考量上述幾項因素，擬假設法定盈餘公積提存率、保費不足準備金之提存與否、危險變動特別準備金提存率等不同情境，分別試算各情境下對產物保險公司的影響，以供實施增提「保費不足準備金」政策之參酌。下表即為若干產物保險

公司根據 95 年度財務數字，分別就四種情況下之試算結果。

情境一： 法定盈餘公積提存率為 20%

保費不足準備金不需提存

危險變動特別準備金提存差額為 30%

情境二： 法定盈餘公積提存率為 20%

保費不足準備金需提存

危險變動特別準備金提存差額為 30%

情境三： 法定盈餘公積提存率為 20%

保費不足準備金需提存

危險變動特別準備金提存差額為 15%

情境四： 法定盈餘公積提存率為 20%

保費不足準備金需提存

危險變動特別準備金提存差額為 0%

保費不足準備金配套措施建議草案試算表

單位：仟元

	95年財務數字	情境一	情境二	情境三	情境四
1. 提存公積	10%	20%	20%	20%	20%
2. 提存危險變動特別準備金	差額30%	差額30%	差額30%	差額15%	差額0%
3. 提存保費不足準備金	No	No	Yes	Yes	Yes
(1)提存保費不足準備金影響數	0	0	499,255	490,253	490,253
(2)危險變動特別準備金影響數	0	0	0	-1,274,845	-2,647,006
(3)稅後淨利影響數	0	0	-374,442	548,290	1,555,711
(4)提存法定盈餘公積影響數	0	590,686	545,769	710,191	891,552
(5)可分配盈餘影響數 =(3)-(4)	0	-590,686	-920,211	-161,902	664,159

註：上述資料係來自11家公司所提供試算之合計結果

三、 相關實務作業之應行配合事項

本研究報告所提之建議方案對於新修訂後之保險法第十一條規定，並無任何影響。但檢視有關「保險業各種準備金提存辦法」所建議之兩種方案，則對現行財產保險業與人身保險業之相關實務作業，可能會產生部份影響，故擬建議應行之配合事項，說明如下：

(一) 財務會計作業之應行配合事項

檢視現行財產保險業與人身保險業之財務會計作業，就可能會產生之影響，擬建議應行配合事項如下：

- (1) 在前述「方案一」中，因須獨立增列「保費不足準備金」之提存項目，故在現行財產保險業與人身保險業之財務會計作業上，應亦同時增列相關會計科目或子目，以符合保險會計作業之需
- (2) 另在前述「方案二」中，因「保費不足準備金」實質上係歸屬於「未滿期保費準備金」之提存項下，故可考量下列兩種不同之方法：

方法一：於會計科目上，無須做任何改變，僅須於計算未滿期保費準備金之過程中，增加保費不足金額之測試與計算即可

方法二：考量於「未滿期保費準備金」項下，增列「保費不足準備金」

會計子目。

說明：(1) 上述方法一中，倘須增提保費不足準備金時，因其已被計入「調整後未滿期保費準備金」中，故可能會牽動現行產險業財務會計作業上之實際損失（率）計算基礎，進而亦有可能間接影響現行「危險變動特別準備金」計算之正確性；因此，倘若政策上採用「方案二」與方法一時，必須就現行產險業財務會計作業上，明確規範於計算上述實際損失（率）基礎上，不得將增提之「保費不足準備金」計入實際損失金額中計算

(2) 上述方法二，因「保費不足準備金」係獨立列示於不同的會計子目，故於計算實際損失（率）時，保費不足準備金數額應不會含括於實際損失（率）之中，而未有任何計算基礎上之影響

此外，倘若實施新制訂之「保費不足準備金」相關提存辦法後，其可能對保險業現行財務會計之基層作業應會產生若干影響，故亦需產險公會及壽險公會等財會委員會協助制定財務會計相關實務作業準則，以利本保險監理政策之施行。

（二） 其他相關實務作業之應行配合事項

有關現行財產保險業與人身保險業需呈報主管機關之年度（月、季、半年）檢查報表等，俟保險監理政策確定要求保險業開始評估及提存「保費不足準備金」時，建議保險事業發展中心等專責單位，應重新進行前述檢查報表之增修作業，並對現行 RBC 制度所需考量之事項，亦應重新檢討評估。同時中華民國精算學會亦應配合修訂「準備金實務處理準則」、「精算意見書範本」、「精算備忘錄範本」及「保險費用表填報釋例」之內容。

（三） 評估相關實務作業影響之建議事項

總之，若以保險業相關實務作業之影響評估，採用「方案一」之方式較為單純可行；另就保險公司財務報表方面之影響，不論方案一或方案二，該保險業當年度若有保費不足之情形者，於實施第一年時，因其財務報表上將增提保費不足準備金之負債項目，故可能減少該保險業當年度之收益成果；惟第二年起，若其保費收入及費率水準等影響因素無重大改變下，則保費不足準備金對財務報表之影響，應逐年回歸常態而影響較為不顯著。

伍、結論

本實務處理釋例之研究，係經過產險精算委員會反覆之檢視及修訂，除邀請公會精算小組共同參與制定過程外，並且參酌多位保險專家及學者之意見，其最後之結果將可兼具實務與理論，可提供精算人員於提存保費不足準備金時有所依據，及實務上可能遭遇案例及其遵循方向。

INSURANCE DEPARTMENT OF THE STATE OF NEW YORK
REGULATION NO. 56
11 NYCRR 94
VALUATION OF INDIVIDUAL AND GROUP
ACCIDENT AND HEALTH INSURANCE RESERVES

I, Eric R. Dinallo, Acting Superintendent of Insurance of the State of New York, pursuant to the authority granted by Sections 201, 301, 1303, 1304, 1305, 1308, 4117, 4217, 4310, and 4517 of the Insurance Law of the State of New York, do hereby repeal Part 94 of Title 11 of the Official Compilation of Codes, Rules and Regulations of the State of New York (Regulation No. 56) and promulgate, as an emergency measure, a new Part 94 of Title 11 of the Official Compilation of Codes, Rules and Regulations of the State of New York (Regulation No. 56) in substitution thereof, to take effect upon filing with the Secretary of State of New York, to read as follows:

(All Material is New)

Section

- 94.1 Purposes
- 94.2 Applicability
- 94.3 Definitions
- 94.4 Claim reserves
- 94.5 Premium reserves
- 94.6 Contract reserves
- 94.7 Reinsurance
- 94.8 Reserves for waiver of premium on accident and health policies
- 94.9 Reserve adequacy
- 94.10 Specific standards for morbidity, interest and mortality
- 94.11 Grading to higher reserves
- 94.12 Severability

SECTION 94.1 Purposes

The purposes of this Part are:

(a) to implement sections 1303, 4117, 4217(d), 4517(d) and 4517(f) of the Insurance Law regarding reserves for accident and health insurance policies; and

(b) to prescribe rules for valuing certain specified accident and health benefits in life insurance policies and annuity contracts.

SECTION 94.2 Applicability

This Part shall apply to every insurance company and fraternal benefit society doing business in this State and every insurance company and fraternal benefit society holding a certificate from the superintendent as being accredited for the reinsurance of life insurance, annuities or accident and health insurance. It shall apply to all individual and group accident and health insurance policies

including credit disability insurance policies issued by such insurers, whether funded in the general account or in a separate account, no matter where issued or assumed, and no matter where shown in the annual statement. This Part shall also apply to certain specified accident and health benefits in life insurance policies and annuity contracts. This Part shall be applicable to such societies and insurers for all statements filed after the effective date of this Part. For the purposes of this Part, "insurer" shall mean such a society or insurer.

SECTION 94.3 Definitions

As used in this Part:

(a) "Annual claim cost" means the net annual cost per unit of benefit before the addition of expenses, including claim settlement expenses, and a margin for profit or contingencies. For example, the annual claim cost for a \$100 monthly disability benefit, for a maximum disability benefit period of one year, with an elimination period of one week, with respect to a male at age 35, in a certain occupation might be \$12, while the gross premium for this benefit might be \$18. The additional \$6 would cover expenses and profit or contingencies.

(b) "Claims accrued" means that portion of claims incurred on or prior to the valuation date which result in liability of the insurer for the payment of benefits for medical services which have been rendered on or prior to the valuation date, and for the payment of benefits for days of hospitalization and days of disability which have occurred on or prior to the valuation date, which the insurer has not paid as of the valuation date, but for which it is liable, and will have to pay after the valuation date. This liability is sometimes referred to as a liability for "accrued" benefits. A claim reserve, which represents an estimate of this accrued claim liability, must be established.

(c) "Claims reported" means that, when an insurer has been informed that a claim has been incurred, if the date reported is on or prior to the valuation date, the claim is considered as a reported claim for annual statement purposes.

(d) "Claims unaccrued" means that portion of claims incurred on or prior to the valuation date, which result in liability of the insurer for the payment of benefits for medical services expected to be rendered after the valuation date, and for benefits expected to be payable for days of hospitalization and days of disability occurring after the valuation date. This liability is sometimes referred to as a liability for unaccrued benefits. A claim reserve, which represents an estimate of the unaccrued claim payments expected to be made (which may or may not be discounted with interest), must be established.

(e) "Claims unreported" means that, when an insurer has not been informed, on or before the valuation date, concerning a claim that has been incurred on or prior to the valuation date, the claim is considered as an unreported claim for annual statement purposes.

(f) "Date of disablement" means the earliest date the insured is considered as being disabled under the definition of disability in the contract, based on a doctor's evaluation or other evidence. Normally, this date will coincide with the start of any elimination period.

(g) "Elimination period" means a specified number of days, weeks, or months starting at the beginning of each period of loss, during which no benefits are payable.

(h) "Gross premium" means the amount of premium charged by the insurer, including the net premium (based on claim cost) for the risk, together with any loading for expenses, profit or contingencies.

(i) "Group insurance" means blanket insurance, franchise insurance and any other form of group insurance. For purposes of reserves, franchise insurance is treated as individual insurance.

(j) "Level premium" means a premium calculated to remain unchanged throughout either the lifetime of the policy, or for some shorter projected period of years. The premium need not be guaranteed; in which case, although it is calculated to remain level, it may be changed if any of the assumptions on which it was based are revised at a later time. Generally, the annual claim costs are expected to increase each year and the insurer, instead of charging premiums that correspondingly increase each year, charges a premium calculated to remain level for a period of years or for the lifetime of the contract. In this case, the benefit portion of the premium is more than needed to provide for the cost of benefits during the earlier years of the policy and less than the actual cost in the later years. The building of a prospective contract reserve is a natural result of level premiums.

(k) "Long-term care insurance" means any insurance policy or rider advertised, marketed, offered or designed to provide coverage for not less than 12 consecutive months for each covered person on an expense incurred, indemnity, prepaid or other basis; for one or more necessary or medically necessary diagnostic, preventive, therapeutic, rehabilitative, maintenance or personal care services, provided in a setting other than an acute care unit of a hospital. The term includes group and individual annuities and life insurance policies or riders that provide directly or supplement long-term care insurance. Long-term care insurance also includes a policy or rider that provides for payment of benefits based upon cognitive impairment or the loss of functional capacity. The term shall also include qualified long-term insurance contracts. Long-term care insurance shall not include any insurance policy that is offered primarily to provide basic Medicare supplement coverage, basic hospital expense coverage, basic medical-surgical expense coverage, hospital confinement indemnity coverage, major medical expense coverage, disability income or related asset-protection coverage, accident-only coverage, specified disease or specified accident coverage, or limited benefit health coverage. With regard to life insurance, long-term care insurance does not include life insurance policies that accelerate the death benefit specifically for one or more of the qualifying events of terminal illness, medical conditions requiring extraordinary intervention or permanent institutional confinement, and that provide a lien against the policy or the option of a lump-sum payment for those benefits, and where neither the benefits nor the eligibility for the benefits is conditioned upon the receipt of long-term care. Long-term care also includes those policies, riders, or certificates covered by Parts 52.12 and 52.13 of this Title (Regulation 62).

(l) "Modal premium" means the premium paid on a contract based on a premium term which could be annual, semi-annual, quarterly, monthly, or weekly. Thus, if the annual premium is \$120 and if, instead, monthly premiums of \$10 are paid, then the modal premium is \$10.

(m) "Negative reserve". Normally the terminal reserve is a positive value. However, if the values of the benefits are decreasing with advancing age or duration it could be a negative value, called a negative reserve.

(n) "Preliminary term reserve method" means a method of valuation under which the valuation net premium for each year falling within the preliminary term period is exactly sufficient to cover the expected incurred claims of that year, so that the terminal reserves will be zero at the end of the year. As of the end of the preliminary term period, a new constant valuation net premium (or stream of changing valuation premiums) becomes applicable such that the present value of all such premiums is equal to the present value of all claims expected to be incurred following the end of the preliminary term period.

(o) "Present value of amounts not yet due on claims" means the reserve for "claims unaccrued" (as defined in subdivision (d) of this section), which may be discounted at interest.

(p) "Rating block" means a grouping of contracts determined by the valuation actuary based on common characteristics filed with the superintendent, such as a policy form or forms having similar benefit designs.

(q) "Reserve" includes all items of benefit liability, whether in the nature of incurred claim liability or in the nature of contract liability relating to future periods of coverage, and whether the liability is accrued or unaccrued. An insurer under its contracts promises benefits, which result in:

(1) Claims that have been incurred; that is, for which the insurer has become obligated to make payment, on or prior to the valuation date. On these claims, payments expected to be made after the valuation date for accrued and unaccrued benefits are liabilities of the insurer, which should be provided for by establishing claim reserves; or

(2) Claims that are expected to be incurred after the valuation date. Any present liability of the insurer for these future claims should be provided for by the establishment of contract reserves and unearned premium reserves.

(r) "Terminal reserve" means the reserve at the end of a contract year, and is the present value of benefits expected to be incurred after that contract year minus the present value of future valuation net premiums.

(s) "Unearned premium reserve" values that portion of the premium paid or due to the insurer that is applicable to the period of coverage extending beyond the valuation date. Thus, if an annual premium of \$120 was paid on November 1, \$20 would be earned as of December 31 and the remaining \$100 would be unearned. The unearned premium reserve could be on a gross basis, as in this example, or on a valuation net premium basis.

(t) "Valuation net modal premium" is the modal fraction of the valuation net annual premium that corresponds to the gross modal premium in effect on any contract to which contract reserves apply. Thus, if the mode of payment in effect is quarterly, the valuation net modal premium is the quarterly equivalent of the valuation net annual premium.

SECTION 94.4 Claim reserves

(a) General

(1) Claim reserves are required for all incurred but unpaid claims on all health insurance policies.

(2) Appropriate claim expense reserves are required with respect to the estimated expense of settlement of all incurred but unpaid claims.

(3) All such reserves for prior valuation years are to be tested for adequacy and reasonableness along the lines of claim runoff schedules in accordance with the statutory financial statement including consideration of any residual unpaid liability.

(b) Minimum Standards for Claim Reserves

(1) Disability Income

(i) Interest. The maximum interest rate for claim reserves is specified in section 94.10 of this Part.

(ii) Morbidity. Minimum standards with respect to morbidity are those specified in section 94.10 of this Part, except that, at the option of the insurer:

(a) In calculating the claim reserve on any valuation date for a claim incurred under an individual policy:

(1) Claim termination rates for claim durations from date of disablement of less than two years may be based on the insurer's own claim termination rate experience if such experience is considered credible, or upon other assumptions designed to place a sound value on the liabilities; and

(2) Claim termination rates for claim durations after the first two years from the date of disablement must be those specified in section 94.10 of this Part.

(3) Example: A study of your company's claim termination rates shows that for claims terminating in the first 24 months from date of disablement its claim termination rates are 110 percent of the Adjusted Termination Rates shown in section 94.10 of this Part. Your company has an open claim as of December 31, 2002 that has a date of disablement of March 31, 2002 and an elimination period of 90 days;

(i) In order to calculate the claim reserve as of December 31, 2002 your company may increase the Adjusted Termination Rates for months ten through 24 by ten percent, but must use 100 percent of the Adjusted Termination Rates for all claim durations beyond the 24th month.

(ii) In order to calculate the claim reserve as of December 31, 2003 your company may increase the Adjusted Termination Rates for months 22 through 24 by ten percent, but must use 100 percent of the Adjusted Termination Rates for all claim durations beyond the 24th month.

(b) In calculating the claim reserve on any valuation date for a claim incurred under a group policy:

(1) Claim termination rates for claim durations from date of disablement of less than two years, may be based on the insurer's own claim termination rate experience if such experience is considered credible, or upon other assumptions designed to place a sound value on the liabilities;

(2) Claim termination rates for claim durations from date of disablement of more than two years but less than five years may, with the approval of the superintendent, be based on the insurer's own claim termination experience for claim durations of more than two years but less than five years and for which the insurer maintains underwriting and claim administration control. For experience to be considered credible for purposes of this subclause, the company must be able to provide claim termination patterns of its own over no more than six years reflecting at least 5,000 claims terminations during the third through fifth claims durations on reasonably similar applicable policy forms; and

(3) Claim termination rates for claim durations after the first five years from the date of disablement of such claims must be those specified in section 94.10 of this Part.

(4) Example: A study of your company's group claim termination rates shows that for claims terminating in the first 24 months from date of disablement its claim termination rates are 120 percent of those of the 1987 Commissioners Group Disability Income Table found in Group Long-Term Disability Valuation Tables, *Transactions of Society of Actuaries 1987, Volume XXXIX, pp. 393 through 457*¹ (87CGDT) and for months 25 through 60 (years three through five) are 110 percent of the 87CGDT. A copy of such document, as adopted by the Society of Actuaries, 475 N. Martingale Road, Suite 800, Schaumburg, IL 60173-2226, in 1988 is available for public inspection at the Insurance Department offices at One Commerce Plaza, Albany, New York 12257 and at 25 Beaver Street, New York, New York 10004. Your company has an open claim as of December 31, 2002 that has a date of disablement of July 31, 2001 and an elimination period of 180 days. In order to calculate the claim reserve:

(i) As of December 31, 2002, your company may increase the claim termination rates of the 87CGDT for months 18 through 24 by 20 percent, and may increase the claim termination rates of the 87CGDT for durations three through five years by ten percent (if approved by the superintendent) but must use 100 percent of the claim termination rates of the 87CGDT for all claim durations beyond the fifth claim year.

(ii) As of December 31, 2003 and thereafter, your company may increase the claim termination rates of the 87CGDT for months 30 through 60 by ten percent, (if approved by the superintendent)

¹ TRANSACTIONS SOCIETY OF ACTUARIES 1987, VOLUME XXXIX Copyright © 1988 by Society of Actuaries, in Schaumburg, Illinois.

but must use 100 percent of the claim termination rates of the 87CGDT for all claim durations beyond the fifth claim year.

(5) The request for approval described in subclause (2) of this clause regarding the use of the insurer's own experience must include:

- (i) an analysis of the credibility of the experience;
- (ii) a description of how all of the insurer's experience is proposed to be used in setting reserves;
- (iii) a description and quantification of the margins to be included;
- (iv) a summary of the financial impact that the proposed plan of modification would have had on the insurer's last filed annual statement;
- (v) a copy of the approval of the proposed plan of modification by the superintendent of the state of domicile; and
- (vi) any other information deemed necessary by the superintendent.

(iii) Duration of Disablement. For contracts with an elimination period, the duration of disablement is measured as dating from the time that benefits would have begun to accrue had there been no elimination period.

(2) All Other Benefits

(i) Interest. The maximum interest rate for claim reserves is specified in section 94.10 of this Part.

(ii) Morbidity or Other Contingency. If section 94.10 of this Part does not specify a minimum standard, the reserve should be based on the insurer's experience, if the experience is considered credible, or upon other assumptions designed to place a sound value on the liabilities.

(3) For claim reserves to reflect "sound values" and reasonable margins, reserve tables based on credible experience should be adjusted regularly to maintain reasonable margins. Demonstrations may be required by the superintendent based on published literature.

(4) Claim Reserve Methods Generally. A generally accepted actuarial reserving method or other reasonable method, if, after a public hearing, the method is approved by the superintendent prior to the statement date, or a combination of such methods may be used to estimate all claim liabilities. The methods used for estimating liabilities generally may be aggregate methods, or various reserve items may be separately valued. Approximations based on groupings and averages may also be employed. Adequacy of the claim reserves, however, shall be determined in the aggregate.

SECTION 94.5 Premium reserves

(a) General

(1) Except as noted in paragraph (2) of this subdivision, unearned premium reserves are required for all contracts with respect to the period of coverage for which premiums, other than premiums paid in advance, have been paid beyond the date of valuation.

(2) Single premium credit disability insurance, both individual and group, is excluded from unearned premium reserve requirements of this section. For all credit disability contracts in the aggregate, if the premium refund reserve exceeds the aggregate recorded reserve, an additional reserve shall be established. This premium refund reserve may include consideration of commission, premium tax, and other expenses recoverable.

(3) If premiums due and unpaid are carried as an asset, the premiums must be treated as premiums in force, subject to unearned premium reserve determination. The value of unpaid commissions, premium taxes and the cost of collection associated with due and unpaid premiums shall be carried as an offsetting liability.

(4) The gross premiums paid in advance for a period of coverage commencing after the next premium due date which follows the date of valuation may be appropriately discounted to the valuation date and shall be held either as a separate liability or as an addition to the unearned premium reserve which would otherwise be required as a minimum.

(b) Minimum Standards for Unearned Premium Reserves

(1) The minimum unearned premium reserve with respect to a contract is the pro rata unearned modal premium that applies to the premium period beyond the valuation date, with the premium determined on the basis of:

- (i) The valuation net modal premium on the contract reserve basis applying to the contract; or
- (ii) The gross modal premium for the contract if no contract reserve applies.

(2) In no event may the sum of the unearned premium and contract reserves for all contracts of the insurer subject to contract reserve requirements be less than the gross modal unearned premium reserve on all such contracts, as of the date of valuation. The reserve shall never be less than the expected claims for the period beyond the valuation date represented by the unearned premium reserve, to the extent not provided for elsewhere.

(c) Premium Reserve Methods Generally

The insurer may employ suitable approximations and estimates, including but not limited to groupings, averages and aggregate estimation, in computing premium reserves. Approximations or estimates should be tested periodically to determine their continuing adequacy and reliability.

SECTION 94.6 Contract reserves

(a) General

(1) Contract reserves are required, unless otherwise specified in paragraph (2) of this subdivision for:

(i) All individual and group contracts with which level premiums, whether or not such premiums are guaranteed, are used; or

(ii) All individual and group contracts with respect to which, due to the gross premium pricing structure at issue, the value of the future benefits at any time exceeds the value of any appropriate future valuation net premiums at that time or where the contract provides for the extension of benefits after the termination of the coverage, e.g., deferred maternity and other similar benefits. This evaluation may be applied on a rating block basis if the total premiums for the block were developed to support the total risk assumed and expected expenses for the block each year, and a qualified actuary certifies the premium development. The actuary should state in the certification that premiums for the rating block were developed such that each year's premium was intended to cover that year's costs without any prefunding. If the premium is also intended to recover costs for any prior years, the actuary should also disclose the reasons for and magnitude of such recovery. The values specified in this subparagraph shall be determined on the basis specified in subdivision (b) of this section.

(2) Contracts that cannot be continued after one year from issue do not require a contract reserve.

(3) The contract reserve is in addition to claim reserves and premium reserves.

(4) The methods and procedures for contract reserves shall be consistent with those for claim reserves for a contract, or else appropriate adjustment shall be made when necessary to assure provision for the aggregate liability. The definition of the date of incurral shall be the same in both determinations. The methods and procedures for contract reserves shall also be consistent with those used for setting premium reserves.

(5) The total contract reserve established shall incorporate provisions for moderately adverse deviations.

(b) Minimum Standards for Contract Reserves

(1) Basis

(i) Morbidity or Other Contingency

(a) Minimum standards with respect to morbidity are those set forth in section 94.10 of this Part. Valuation net premiums used under each contract shall be a uniform percentage of the gross

premium structure at issue of the contract as this relates to advancing age of insured, contract duration and period for which gross premiums have been calculated.

(b) Clause (a) of this subparagraph applies only to the premium structure applicable to each contract. The relationship among gross premiums for different contracts (e.g., variations by age) has no bearing on the new premium structure. If, for a policy form, there is no gross premium variation by age, the valuation net premium will nonetheless vary based on age at issue for each contract since, at issue, the present value of valuation net premiums for a contract must equal the present value of tabular net costs.

(c) Contracts for which tabular morbidity standards are not specified in section 94.10 of this Part shall be valued using tables established for reserve purposes by a qualified actuary and acceptable to the superintendent. The morbidity tables shall contain a pattern of incurred claims so that it reflects the underlying morbidity and shall not be constructed for the primary purpose of minimizing reserves.

In determining the morbidity assumptions, the actuary shall use assumptions that represent the best estimate of anticipated future experience, but shall not incorporate any expectation of future morbidity improvement. Morbidity improvement is a change, in the combined effect of claim frequency and the present value of future expected claim payments given that a claim has occurred, from the current morbidity tables or experience that will result in a reduction to reserves. It is not the intent of this provision to restrict the ability of the actuary to reflect the morbidity impact for a specific known event that has occurred and that is able to be evaluated and quantified. The last sentence is intended to provide allowances for a known event, such as a new drug release. At the time of adoption, there were no specific examples that could be pointed to in the recent past that would have met this standard. This is intended to be an extremely rare event.

(ii) Interest. The maximum interest rate is specified in section 94.10 of this Part.

(iii) Termination Rates. Termination rates used in the computation of reserves shall be on the basis of a mortality table as specified in section 94.10 of this Part except as noted in the following clauses:

(a) Under contracts for which premium rates are not guaranteed, and where the effects of insurer underwriting are specifically used by policy duration in the valuation morbidity standard or for return of premium or other deferred cash benefits, total termination rates may be used at ages and durations where these exceed specified mortality table rates, but not in excess of the lesser of 80 percent of the total termination rate used in the calculation of the gross premiums, or eight percent.

(b) For long-term care individual policies or group certificates issued on or after January 1, 1997 and before January 1, 2003, the contract reserve may be established on a basis of separate:

(1) Mortality (as specified in section 94.10 of this Part); and

(2) Terminations other than mortality, where the terminations are not to exceed:

(i) For policy years one through four, the lesser of 80 percent of the voluntary lapse rate used in the calculation of gross premiums or eight percent;

(ii) For policy years five and later, the lesser of 100 percent of the voluntary lapse rate used in the calculation of gross premiums or four percent.

(c) For long-term care individual policies or group certificates issued on or after January 1, 2003, the contract reserve shall be established on the basis of:

(1) Mortality (as specified in section 94.10 of this Part); and

(2) Terminations other than mortality, where the terminations are not to exceed:

(i) For policy year one, the lesser of 80 percent of the voluntary lapse rate used in the calculation of gross premiums or six percent;

(ii) For policy years two through four, the lesser of 80 percent of the voluntary lapse rate used in the calculation of gross premiums or four percent; and

(iii) For policy years five and later:

(A) For individual policies, the lesser of 100 percent of the voluntary lapse rate used in the calculation of gross premiums or two percent; and

(B) For group certificates, the lesser of 100 percent of the voluntary lapse rate used in the calculation of gross premiums or three percent.

(d) Where a morbidity standard specified in section 94.10 of this Part is on an aggregate basis, the morbidity standard may be adjusted to reflect the effect of insurer underwriting by policy duration. The adjustments must be appropriate to the underwriting and be acceptable to the superintendent.

(2) Reserve Method

(i) For insurance, except long-term care and return of premium or other deferred cash benefits, the minimum reserve is the reserve calculated on the two-year full preliminary term method; that is, under which the terminal reserve is zero at the first and also the second contract anniversary.

(ii) For long-term care insurance, the minimum reserve is the reserve calculated as follows:

(a) For individual policies and group certificates issued on or before December 31, 1994, reserves calculated on the two-year full preliminary term method; and

(b) For individual policies and group certificates issued on or after January 1, 1995, reserves calculated on the one-year full preliminary term method.

(iii) For return of premium or other deferred cash benefits, excluding the premium refund reserve on single premium credit disability insurance, the minimum reserve is the reserve calculated as follows:

(a) On the one-year preliminary term method if the benefits are provided at any time before the 20th anniversary; and

(b) On the two-year preliminary term method if the benefits are only provided on or after the 20th anniversary.

(iv) The preliminary term method may be applied only in relation to the date of issue of a contract. Reserve adjustments introduced later, as a result of rate increases, revisions in assumptions (e.g., projected inflation rates) or for other reasons, are to be applied immediately as of the effective date of adoption of the adjusted basis.

(3) Negative Reserves. Negative reserves on any benefit may be offset against positive reserves for other benefits in the same contract, but the total contract reserve with respect to all benefits combined may not be less than zero.

(4) Nonforfeiture Benefits. The contract reserve for each policy shall not be less than the net single premium for the nonforfeiture benefits at the appropriate policy duration, where the net single premium is computed according to the above specifications.

(c) Alternative Valuation Methods and Assumptions Generally. Provided the contract reserve on all contracts to which an alternative method or basis is applied is not less in the aggregate than the amount determined according to the applicable standards specified in subdivision (b) of this section; an insurer may use any reasonable assumptions as to interest rates, termination and mortality rates, and rates of morbidity or other contingency. Also, subject to the preceding condition, the insurer may employ methods other than the methods stated in subdivision (b)(2) of this section in determining a sound value of its liabilities under such contracts, including, but not limited to the following: the net level premium method; the one-year full preliminary term method; prospective valuation on the basis of actual gross premiums with reasonable allowance for future expenses; the use of approximations such as those involving age groupings, groupings of several years of issue, average amounts of indemnity, grouping of similar contract forms; the computation of the reserve for one contract benefit as a percentage of, or by other relation to, the aggregate contract reserves exclusive of the benefit or benefits so valued; and the use of a composite annual claim cost for all or any combination of the benefits included in the contracts valued.

(d) Tests for Adequacy and Reasonableness of Contract Reserves.

(1) Annually, an appropriate review shall be made of the insurer's prospective contract liabilities on contracts valued by tabular reserves, to determine the continuing adequacy and reasonableness of the tabular reserves giving consideration to future gross premiums. The insurer shall make appropriate increments to such tabular reserves if such tests indicate that the basis of such reserves is no longer adequate; subject, however, to the minimum standards of subsection 94.6(b) of this Part.

(2) In the event an insurer has a contract or a group of related similar contracts, for which future gross premiums will be restricted by contract, Insurance Department regulations, regulatory approval for rate changes, or for other reasons, such that the future gross premiums reduced by expenses for administration, commissions, and taxes will be insufficient to cover future claims, the insurer shall establish contract reserves for such shortfall in the aggregate.

SECTION 94.7 Reinsurance

Increases to or credits against reserves carried, arising because of reinsurance assumed or reinsurance ceded, must be determined in a manner consistent with these minimum reserve standards and with all applicable provisions of the reinsurance contracts that affect the insurer's liabilities.

SECTION 94.8 Reserves for waiver of premium on accident and health policies

The morbidity tables required by this Part are based on exposures that include contracts on premium waiver as in-force contracts. Hence, contract reserves based on these tables are not reserves on "active lives" but rather reserves on contracts "in force." This is true for the 1964 Commissioners Disability Table *Volume III Committee Recommendation and Basic Tables pp. i, iii, and 1 through 16*² (64CDT) and for both the 1985 Commissioners Individual Disability Tables A found in Report of the Committee to Recommend New Disability Tables for Valuation *Transactions of Society of Actuaries 1985, Volume XXXVII, pp. 449 through 466*³ (85CIDA) and 1985 Commissioners Individual Disability Tables B found in APPENDIX to Report of October 18, 1984 to National Association of Insurance Commissioners (NAIC) Life, Health and Accident Standing Technical Actuarial (EX5) Task Force concerning Proposed New Minimum Valuation Standards for Loss of Time (Disability Income) Benefits *NAIC Proceedings – 1985 Vol. I, pp. 486 through 540*⁴ (85CIDB). Copies of such documents, as adopted by the Health Insurance Association of America, 1201 F Street, NW – Suite 500, Washington, DC 20004-1204, in 1965, the Society of Actuaries, 475 N. Martingale Road, Suite 800, Schaumburg, IL 60173-2226, in 1986, and the National Association of Insurance Commissioners, 2301 McGee Street, Suite 800, Kansas City, MO 64108-2662, in 1983, respectively, are available for public inspection at the Insurance Department offices at One Commerce Plaza, Albany, New York 12257 and at 25 Beaver Street, New York, New York 10004. Accordingly, tabular reserves using any of these tables should value reserves on the following basis:

(a) Claim reserves should include reserves for premiums expected to be waived, valuing as a minimum the valuation net premium being waived.

² 1964 COMMISSIONERS DISABILITY TABLE © Copyright 1965 by Health Insurance Association of America, in Washington, DC.

³ TRANSACTIONS OF SOCIETY OF ACTUARIES 1985, VOLUME XXXVII © Copyright 1986 by Society of Actuaries, in Schaumburg, Illinois.

⁴ NAIC PROCEEDINGS – 1985 VOL. I © Copyright 1985 by National Association of Insurance Commissioners, in Kansas City, Missouri.

(b) Premium reserves should include contracts on premium waiver as in-force contracts, valuing as a minimum the unearned modal valuation net premium being waived.

(c) Contract reserves should include recognition of the waiver of premium benefit in addition to other contract benefits provided for, valuing as a minimum the valuation net premium to be waived.

SECTION 94.9 Reserve adequacy

(a) The insurer shall maintain reserves for all individual and group accident and health insurance policies, which reserves shall reflect a sound value placed on its liabilities under such policies.

(b) When an insurer determines that adequacy of its health insurance reserves requires reserves in excess of the minimum standards specified herein, such increased reserves shall be held and shall be considered the minimum for that insurer.

(c) A premium deficiency reserve is a reserve that is established when future premiums and current reserves are not sufficient to cover future claim payments and expenses for the remainder of a contract period. This reserve is in addition to claim reserves and contract reserves.

When the expected present value of claims payments or incurred costs, claim adjustment expenses and administration costs exceed the present value of premiums to be collected for the remainder of a contract period, a premium deficiency reserve shall be recognized by recording an additional reserve for the deficiency. For purposes of determining if a premium deficiency exists, contracts shall be grouped in a manner consistent with how policies are marketed, serviced and measured. A reserve shall be recognized for each grouping where a premium deficiency is indicated. Deficiencies shall not be offset by anticipated profits in other policy groupings. Such accruals shall be made for any loss contracts, even if the contract period has not yet started.

(d) With respect to any block of contracts, or with respect to an insurer's health business as a whole, a prospective gross premium valuation is a test of reserve adequacy as of a given valuation date. Such a gross premium valuation will take into account, for contracts in force, in a claims status, or in a continuation of benefits status on the valuation date, the present value as of the valuation date of: all expected benefits unpaid, all expected expenses unpaid, and all unearned or expected premiums, adjusted for future premium increases reasonably expected to be put into effect.

(e) A gross premium valuation as specified in subdivision (d) of this section is to be performed whenever a significant doubt exists as to reserve adequacy with respect to any major block of contracts, or with respect to the insurer's health business as a whole. In the event inadequacy is found to exist, immediate loss recognition shall be made and the reserves restored to adequacy. Adequate reserves (inclusive of claim, premium and contract reserves, if any) shall be held with respect to all contracts, regardless of whether contract reserves are otherwise required for such contracts under this Part.

(f) Whenever minimum reserves, as defined in these standards, exceed reserve requirements as determined by a prospective gross premium valuation, such minimum reserves remain the minimum requirement under this Part.

(g) Adequacy of an insurer's health insurance reserves is to be determined on the basis of all three categories combined (i.e., claim, premium, and contract reserves). However, the standards of this Part are intended to emphasize the importance of determining appropriate reserves for each of the three categories separately.

SECTION 94.10 Specific standards for morbidity, interest and mortality

(a) Morbidity

(1) Minimum morbidity standards for valuation of specified individual contract health insurance benefits are as follows:

(i) Disability Income Benefits Due to Accident or Sickness

(a) Contract Reserves. In establishing contract reserves:

(1) For contracts issued prior to January 1, 1965: The minimum standard is the standard used prior to that date provided it puts a sound value on the liabilities under the policy. Otherwise the 64CDT shall be used;

(2) For contracts issued on or after January 1, 1965 and prior to January 1, 1989: 64CDT shall be used; and

(3) For contracts issued on or after January 1, 1989: 85CIDA or 85CIDB shall be used. Each insurer shall elect, with respect to all individual policies issued in any one statement year, whether it will use 85CIDA or 85CIDB as the minimum standard.

(b) Claim Reserves

(1) For claims incurred on or after January 1, 2001, an insurer shall use the 85CIDA with claim termination rates multiplied by the following adjustment factor:

Duration	Adjustment Factor	Adjusted Termination Rates*
Week 1	0.366	0.04831
2	0.366	0.04172
3	0.366	0.04063
4	0.366	0.04355
5	0.365	0.04088
6	0.365	0.04271

Duration	Adjustment Factor	Adjusted Termination Rates*
7	0.365	0.04380
8	0.365	0.04344
9	0.370	0.04292
10	0.370	0.04107
11	0.370	0.03848
12	0.370	0.03478
13	0.370	0.03034
Month 4	0.391	0.08758
5	0.371	0.07346
6	0.435	0.07531
7	0.500	0.07245
8	0.564	0.06655
9	0.613	0.05520
10	0.663	0.04705
11	0.712	0.04486
12	0.756	0.04309
13	0.800	0.04080
14	0.844	0.03882
15	0.888	0.03730
16	0.932	0.03448
17	0.976	0.03026
18	1.020	0.02856
19	1.049	0.02518
20	1.078	0.02264
21	1.107	0.02104
22	1.136	0.01932
23	1.165	0.01865
24	1.195	0.01792
Year 3	1.369	0.16839
4	1.204	0.10114
5	1.199	0.07434
6 and later	1.000	**

- * The adjusted termination rates derived from the application of the adjustment factors to the DTS Valuation termination rates shown in exhibits 3a, 3b, 3c, 4, and 5 (*Transactions of the Society of Actuaries (TSA) XXXVII, pp. 457-465*) is displayed. The adjustment factors for age, elimination period, class, sex, and cause displayed in exhibits 3a, 3b, 3c, and 4 are applied to the adjusted termination rates shown in this table.

** Applicable DTS Valuation Table duration rate from exhibits 3c and 4 (TSA XXXVII, pp. 462-463).

The 85CIDA tables so adjusted for the computation of claim reserves shall be known as The Commissioners Individual Disability Tables C (85CIDC).

(2) For claims incurred prior to January 1, 2001, each insurer may elect one of the following to use as the minimum standard:

(i) The minimum morbidity standard in effect for contract reserves on currently issued contracts, as of the date the claim is incurred; or

(ii) The standard as defined in subclause (1) of this clause, applied to all open claims.

Once an insurer elects to calculate reserves for all open claims on the standard defined in subclause (1) of this clause, all future valuations must be on that basis.

(3) For policies with an elimination period, the duration of disablement should be considered as dating from the time that benefits would have begun to accrue had there been no elimination period.

(4) A new disability connected directly or indirectly with a previous disability, which had a duration of at least one year and terminated within six months of the new disability, should be considered a continuation of the previous disability.

(ii) Hospital Benefits, Surgical Benefits and Maternity Benefits (Scheduled benefits or fixed time period benefits only)

(a) Contract Reserves. In establishing contract reserves:

(1) For contracts issued on or after January 1, 1955, and before January 1, 1982: The 1956 Intercompany Hospital-Surgical Tables found in Edwin L. Bartleson's and James J. Olsen's paper Reserves for Individual Hospital and Surgical Expense Insurance *Transactions of Society of Actuaries 1957, Volume IX, pp. 334 through 417* (56 Hospital/Surgical Tables)⁵ shall be used; and

(2) For contracts issued on or after January 1, 1982: The 1974 Medical Expense Tables, Table A (page 63), found in Anthony J. Houghton's and Ronald M. Wolf's paper Development of the 1974 Medical Expense Tables *Transactions of the Society of Actuaries, Volume XXX, pp. 9 through 123*⁶ shall be used. Refer to the paper, including its discussions, for methods of adjustment for benefits not directly valued in Table A.

⁵ TRANSACTIONS OF SOCIETY OF ACTUARIES 1957, VOLUME IX Published by Society of Actuaries in Schaumburg, Illinois; not copyrighted.

⁶TRANSACTIONS OF SOCIETY OF ACTUARIES 1978, VOLUME XXX Published by Society of Actuaries in Schaumburg, Illinois; not copyrighted.

Copies of the Reserves for Individual Hospital and Surgical Expense Insurance – 1956 Hospital Surgical Table and Development of the 1974 Medical Expense Tables as adopted by the Society of Actuaries, 475 N. Martingale Road, Suite 800, Schaumburg, IL 60173-2226, in 1957 and 1978, respectively, are available for public inspection at the Insurance Department offices at One Commerce Plaza, Albany, New York 12257 and at 25 Beaver Street, New York, New York 10004.

(b) Claim Reserves. No specific standard is required; subject, however, to all other applicable requirements of this Part.

(iii) Cancer Expense Benefits (Scheduled benefits or fixed time period benefits only)

(a) Contract Reserves. For contracts issued on or after January 1, 1986: The 1985 NAIC Cancer Claim Cost Tables, ATTACHMENT FOUR – D, *NAIC Proceedings - 1986 Vol. I, pp. 601 through 624*⁷ shall be used. A copy of such document as adopted by the National Association of Insurance Commissioners, 2301 McGee Street, Suite 800, Kansas City, MO 64108-2662, in 1986 is available for public inspection at the Insurance Department offices at One Commerce Plaza, Albany, New York 12257 and at 25 Beaver Street, New York, New York 10004.

(b) Claim Reserves. No specific standard is required; subject, however, to all other applicable requirements of this Part.

(iv) Accidental Death Benefits

(a) Contract Reserves. For contracts issued on or after January 1, 1965: The 1959 Accidental Death Benefits Table found in Norman Brodie's and William J. November's paper A New Table for Accidental Death Benefits *Transactions of Society of Actuaries 1959, Volume XI, pp. 749 through 763*⁸ (59ADB Table) shall be used. A copy of such document as adopted by the Society of Actuaries, 475 N. Martingale Road, Suite 800, Schaumburg, IL 60173-2226, in 1959 is available for public inspection at the Insurance Department offices at One Commerce Plaza, Albany, New York 12257 and at 25 Beaver Street, New York, New York 10004.

(b) Claim Reserves. Actual amount incurred shall be used.

(v) Credit Disability

(a) Contract Reserves

(1) Single Premium and Level Premium Credit Disability

(i) For contracts issued on or after January 1, 2001:

⁷ NAIC PROCEEDINGS – 1986 VOL. I © Copyright 1986 by National Association of Insurance Commissioners, in Kansas City, Missouri.

⁸ TRANSACTIONS OF SOCIETY OF ACTUARIES 1959, VOLUME XI Published by Society of Actuaries in Schaumburg, Illinois; not copyrighted.

(A) For plans having less than a 30-day elimination period, the 1985 Commissioners Individual Disability Tables A (85CIDA) with claim incidence rates increased by 12 percent.

(B) For plans having a 30-day or greater elimination period, the 85CIDA for a 14-day elimination period with claim incidence rates increased by 12 percent.

(ii) For contracts issued prior to January 1, 2001, each insurer may elect either subitem (A) or (B) of this item to use as the minimum standard. Once an insurer elects to calculate reserves for all contracts on the standard defined in item (i) of this subclause, all future valuations must be on that basis.

(A) The minimum morbidity standard in effect for individual disability income contract reserves, on currently issued contracts, as of the date the contract was issued; or

(B) The standard, as defined in item (i) of this subclause, applied to all contracts.

(2) All other Credit Disability. No specific standard; subject, however, to all other applicable requirements of this Part.

(b) Claim Reserves. No specific standard; subject, however, to all other applicable requirements of this Part.

(vi) Long-Term Care Benefits

(a) Contract Reserves. No specific standard shall be required; subject, however, to all other applicable requirements of the Part.

(b) Claim Reserves. No specific standard shall be required; subject to all other applicable requirements of this Part.

(vii) Other Individual Contract Benefits

(a) Contract Reserves. For all other individual contract benefits, no specific standard shall be required; subject, however, to all other applicable requirements of this Part.

(b) Claim Reserves. For all benefits other than disability, no specific standard shall be required; subject, however, to all other applicable requirements of this Part.

(2) Minimum morbidity standards for valuation of specified group contract health insurance benefits are as follows:

(i) Disability Income Benefits Due to Accident or Sickness

(a) Contract Reserves

(1) For contracts issued prior to January 1, 1989, contract reserves shall be on the same basis, if any, as that employed by the insurer as of January 1 of the year of issue; and

(2) For contracts issued on or after January 1, 1989, the 1987 Commissioners Group Disability Income Table (87CGDT) shall be used.

(b) Claim Reserves

(1) For claims incurred prior to January 1, 1989, claim reserves shall be on the same basis, if any, as that employed by the insurer as of January 1 of the year of incurral; and

(2) For claims incurred on or after January 1, 1989, the 1987 Commissioners Group Disability Income Table (87CGDT) shall be used.

(ii) Credit Disability

(a) Contract Reserves

(1) Single Premium and Level Premium Credit Disability

(i) For contracts issued on or after January 1, 2001:

(A) For plans having less than a 30-day elimination period, the 1985 Commissioners Individual Disability Tables A (85CIDA) with claim incidence rates increased by 12 percent shall be used; and

(B) For plans having a 30-day or greater elimination period, the 85CIDA for a 14-day elimination period with claim incidence rates increased by 12 percent shall be used; and

(ii) For contracts issued prior to January 1, 2001, each insurer may elect either subitem (A) or (B) of this item to use as the minimum standard. Once an insurer elects to calculate reserves for all contracts on the standard defined in item (i) of this subclause, all future valuations must be on that basis.

(A) The minimum morbidity standard in effect for individual disability income contract reserves, on currently issued contracts, as of the date the contract was issued; or

(B) The standard, as defined in item (i) of this subclause, applied to all contracts.

(2) All other Credit Disability. No specific standard shall be required; subject, however, to all other applicable requirements of this Part.

(b) Claim Reserves. No specific standard shall be required; subject, however, to all other applicable requirements of this Part.

(iii) Long-Term Care Benefits

(a) Contract Reserves. No specific standard shall be required; subject, however, to all other applicable requirements of the Part.

(b) Claim Reserves. No specific standard shall be required; subject, however, to all other applicable requirements of this Part.

(iv) Other Group Contract Benefits

(a) Contract Reserves. For all other group contract benefits, no specific standard shall be required; subject, however, to all other applicable requirements of this Part.

(b) Claim Reserves. For all benefits other than disability, no specific standard shall be required; subject, however, to all other applicable requirements of this Part.

(b) Interest

(1) For contract reserves the maximum interest rate is the maximum rate permitted by law in the valuation of life insurance policies with guarantee durations in excess of 20 years issued on the same date as the health insurance contract.

(2) For claim reserves on policies that require contract reserves, the maximum interest rate is the maximum rate permitted by law in the valuation of life insurance with guarantee durations in excess of 20 years issued on the same date as the claim incurral date.

(3) For claim reserves on policies not requiring contract reserves, the maximum interest rate is the maximum rate permitted by law in the valuation of single premium immediate annuities issued on the same date as the claim incurral date, reduced by one hundred basis points.

(c) Mortality

(1) Unless paragraph (3) or (4) of this subdivision applies, the mortality basis used for all individual policies and group certificates, except long-term care insurance individual policies or group certificates issued on or after January 1, 1997, shall be the table specified in the Insurance Law or other Parts of this Title (but without use of selection factors) as the minimum standard permitted, for the valuation of whole life insurance issued on the same date as the health insurance contract. For example: the 1980 Commissioners Standard Ordinary Table found in Report of the Special Committee to Recommend New Mortality Tables for Valuation *Transactions of Society of Actuaries 1981, Volume XXXIII, pp.617 through 669* (80CSO)⁹ could be used on an optional basis as of January 1, 1981 and therefore for this purpose the appropriate date would be January 1, 1981. A copy of such document as adopted by the Society of Actuaries, 475 N. Martingale Road, Suite 800, Schaumburg, IL 60173-2226, in 1981 is available for public inspection at the Insurance Department offices at One Commerce Plaza, Albany, New York 12257 and at 25 Beaver Street, New York, New York 10004.

⁹TRANSACTIONS OF SOCIETY OF ACTUARIES, VOLUME XXXIII © Copyright 1982 by Society of Actuaries in Schaumburg, Illinois.

(2) For long-term care insurance individual policies or group certificates issued on or after January 1, 1997 and before January 1, 2005, the mortality basis used shall be the 1983 Group Annuity Mortality Table (83GAM), contained in Part 99.10(i)(3) of this Title (Regulation 151), without projection.

(3) For long-term care insurance individual policies or group certificates issued on or after January 1, 2005, the mortality basis used shall be the 1994 Group Annuity Mortality Static Table. Rates of mortality for such basis are shown in the qx¹⁹⁹⁴ column of the 1994 Group Annuity Reserving Table contained in Part 99.10(i)(4) of this Title (Regulation 151).

(4) Other mortality tables adopted by the NAIC and promulgated by regulation by the superintendent may be used in the calculation of the minimum reserves if appropriate for the type of benefits and if approved by the superintendent for use by the insurer in calculating such reserves. The request for approval shall include the proposed mortality table and the reason that the standard specified in paragraph (1) of this subdivision is inappropriate.

(5) For single premium and level premium credit insurance using the 85CIDA tables, no separate mortality table shall be assumed.

SECTION 94.11 Grading to higher reserves

Where the requirements of this Part produce higher reserves than those calculated for the 2002 year-end valuation, the insurer may linearly interpolate between the higher reserves required by this Part and the lower reserves based on the standards used for 2002 year-end as follows:

- (a) 25 percent and 75 percent, respectively, starting with year-end 2003;
- (b) 50 percent and 50 percent, respectively, starting with year-end 2004;
- (c) 75 percent and 25 percent, respectively, starting with year-end 2005; and
- (d) the insurer shall hold the full amount of such higher reserves starting with year-end 2006.

SECTION 94.12 Severability

If any provision of this Part or the application thereof to any person or circumstance is adjudged invalid by a court of competent jurisdiction, such judgment shall not affect or impair the validity of the other provisions of this Part or the application thereof to other persons and circumstances.

I, Eric R. Dinallo, Acting Superintendent of Insurance of the State of New York, do hereby repeal Part 94 of Title 11 of the Official Compilation of Codes, Rules and Regulations of the State of New York (Regulation No. 56) and do hereby certify that the foregoing is the new Part 94 of Title 11 (Regulation 56), promulgated by me on March 12, 2007, pursuant to the authority granted by Sections 201, 301, 1303, 1304, 1305, 1308, 4117, 4217, 4310, and 4517 of the Insurance Law, to take effect upon filing with the Secretary of State.

The regulation was previously promulgated as an emergency measure on 18 occasions effective December 31, 2002, March 24, 2003, June 17, 2003, September 8, 2003, December 2, 2003, February 26, 2004, May 19, 2004, August 11, 2004, November 4, 2004, January 26, 2005, April 21, 2005, July 15, 2005, October 12, 2005, January 6, 2006, April 5, 2006, June 29, 2006, September 21, 2006, and December 14, 2006.

Pursuant to Section 202(6) of the State Administrative Procedure Act, 11 NYCRR 94 (Regulation 56) is being promulgated as an emergency measure. A statement of the specific reasons for the finding of the need for emergency action is attached.

Eric R. Dinallo
Acting Superintendent of Insurance

Dated: March 12, 2007

Statement of the Reasons for Emergency Measure for the Repeal of Regulation No. 56 (11 NYCRR 94) and promulgation of a new Regulation No. 56

Regulation No. 56 was originally effective August 18, 1971 in its present form and has not been substantively amended since that time. In the intervening 31 years, the National Association of Insurance Commissioners has adopted new reserving tables for individual and group disability income insurance policies, popularly referred to as the Commissioners' Disability Tables ("CDT"). The current CDT was adopted in 1986 and is used widely across the country as the standard for holding reserves for individual and group disability insurance policies. It reflects both modern morbidity and claims experience and the judgement of actuaries and regulators who are knowledgeable about the current state of the disability insurance market.

However, New York authorized insurers are required to use the 1964 CDT because it was required by Regulation No. 56 (see, e.g., 11 NYCRR Part 94.1(a)(4)(iii)(A)). Also, Regulation No. 56 did not apply to group insurance, providing little or no guidance to New York insurers that write this important form of protection. The effect of the application of this outdated regulation is that New York authorized insurers are required to hold reserves far in excess of the national standard for disability insurance active lives reserves, but below the prevailing standard for claims reserves. Most New York authorized insurers hold reserves in excess of the amount needed to pay claims due to the required use of the outdated tables. For these insurers, the adoption of the more recent tables will significantly reduce the cost of doing business and allow them to compete more effectively with insurers that are not subject to New York standards and to pass the cost savings on to consumers. For some insurers, this regulation may require an increase in reserves especially for coverages such as group health insurance for which there had been no standards previously. The adoption of these standards will help to ensure that such insurers remain financially capable of paying claims as they come due.

New York authorized insurers must file quarterly financial statements based upon minimum reserve standards in effect on December 31 of the preceding year. The filing date for the March 31, 2007 quarterly statement is May 15, 2007. The insurers must be given advance notice of the applicable standards in order to file their reports in an accurate and timely manner.

The regulation was previously promulgated as an emergency measure on 18 occasions effective December 31, 2002, March 24, 2003, June 17, 2003, September 8, 2003, December 2, 2003, February 26, 2004, May 19, 2004, August 11, 2004, November 4, 2004, January 26, 2005, April 21, 2005, July 15, 2005, October 12, 2005, January 6, 2006, April 5, 2006, June 29, 2006, September 21, 2006, and December 14, 2006. The original Pre-Proposal for Regulation 56 was sent to GORR on January 28, 2003. Minor changes were made to the text in the March 24, 2003 and June 17, 2003 emergency regulations. Subsequently, the National Association of Insurance Commissioners ("NAIC") Accident & Health Working Group of the Life & Health Actuarial Task Force adopted changes to the NAIC's Health Insurance Reserves Model Regulation. These changes include sections discussing: disability income claim reserves, unearned premium reserves for Single Premium Credit disability income business, lapse and mortality rates for contract reserves for long term care insurance, as well as changes to the effective dates associated with these changes. Changes to the NAIC's Health Insurance Reserves Model Regulation were incorporated into the

February 26, 2004 emergency regulation. In the July 15, 2005 version, the regulation was made applicable to Health and Property and Casualty insurers as well as life insurers.

The Revised Proposal was approved by GORR on October 2, 2006 and a Notice of Proposed Rulemaking will be published in the State Register in the near future. In order to enable New York authorized insurers to file the March 31, 2007 quarterly financial statement based upon minimum reserve standards in effect on December 31, 2006, the regulation must be continued on an emergency basis.

For all of the reasons stated above, an emergency adoption of this new Regulation No. 56 is necessary for the general welfare.

Eric R. Dinallo
Acting Superintendent of Insurance

Date: March 12, 2007

INSURANCE DEPARTMENT OF THE STATE OF NEW YORK
REGULATION NO. 147
(11 NYCRR 98)
VALUATION OF LIFE INSURANCE RESERVES

I, Gregory V. Serio, Superintendent of Insurance of the State of New York, pursuant to the authority granted by Sections 201, 301, 1304, 1308, 4217, 4218, 4240 and 4517, of the Insurance Law of the State of New York do hereby repeal Part 98 of Title 11 of the Official Compilation of Codes, Rules and Regulations of the State of New York (Regulation No. 147) and promulgate Part 98 of Title 11 of the Official Compilation of Codes, Rules and Regulations of the State of New York (Regulation No. 147) in substitution thereof, to take effect upon publication in the State Register, to read as follows:

(All Material is New)

Section

- 98.1 Purposes
- 98.2 Applicability
- 98.3 Definitions
- 98.4 General requirements for all life insurance policies subject to this part unless stated otherwise
- 98.5 Contract segmentation method
- 98.6 Minimum reserves for life insurance policies with non-level premiums and/or non-level death benefits
- 98.7 Minimum reserves for universal life insurance policies
- 98.8 Minimum reserves for variable life insurance policies
- 98.9 Severability

Section 98.1 Purposes

The purposes of this Part are:

(a) to prescribe rules and guidelines for valuing individual life insurance policies and certain group life insurance certificates, with primary emphasis on valuation of non-level premium and/or non-level benefit life insurance policies, indeterminate premium life insurance policies, universal life insurance policies, and variable life insurance policies in accordance with statutory reserve formulae;

(b) to permit, in certain situations, the use of new mortality selection factors in valuing statutory reserves; and

(c) to prescribe rules and guidelines for valuing statutory reserves in accordance with the timing of payment of death claims.

Section 98.2 Applicability

(a) This Part shall apply to all life insurance companies and fraternal benefit societies doing business in this State and all insurers holding a certificate from the superintendent as being accredited for the reinsurance of life insurance, annuities or accident and health insurance. It shall be applicable to all individual life insurance policies and group life insurance certificates, except as noted in subdivisions (b) through (f) of this section, of any of the foregoing, whether funded in the general account or in a separate account, no matter where issued or assumed, and no matter where shown in the annual statement. This Part shall be applicable to such companies, societies and insurers for all statements filed after the effective date of this Part.

(b) This Part shall not apply to group life insurance certificates unless such certificates provide for a stated or implied schedule of guaranteed gross premiums required in order to continue coverage in force for a period in excess of one year.

(c) Except as required in subdivision (e) of this section, this Part shall not apply to any individual life insurance policy issued on or after the relevant date specified in subdivision (d) of this section if such policy is issued in accordance with and as a result of the exercise of a reentry provision contained in an individual life insurance policy of the same or greater face amount, issued before such date, which guarantees the premium rates of the new policy if such guaranteed premium rates were specified in the original policy of the series of reentry policies issued to the individual policyholder. Except as required in subdivision (e) of this section, this Part shall not apply to subsequent policies of the same or lesser face amount, issued as a result of the exercise of such a provision in the new policy or derivatives thereof, if the guaranteed premium rates of such subsequent policies were specified in the original policy of the series of reentry policies issued to the individual policyholder.

(d) Policies Issued On or After January 1, 1994 or January 1, 1995

(1) This Part shall apply for all statements filed after the effective date of this Part to all individual life insurance policies and group life insurance certificates issued on or after January 1, 1994 except as noted in the next paragraph.

(2) For insurers subject to this Part solely due to the fact that the insurer is holding a certificate from the superintendent as being accredited for the reinsurance of life insurance, annuities, or accident and health insurance, this Part shall apply for all statements filed after the effective date of this Part to all individual life insurance policies and group life insurance certificates issued or assumed on or after January 1, 1995; however, this Part shall apply to all such policies or certificates issued on or after January 1, 1994 which were reinsured to such insurer directly or indirectly by a company doing business in this State.

(e) Policies Issued Prior to the Relevant Dates, January 1, 1994 or January 1, 1995, of Subdivision (d) of this Section

(1) Universal Life Insurance Policies

The following requirements of this Part shall apply for all statements filed after the effective date of this Part to all universal life insurance policies issued before the relevant date of subdivision (d) of this section (i.e., January 1, 1994 or, for certain policies issued or assumed by accredited reinsurers, January 1, 1995) by licensed life insurers, fraternal benefit societies, and accredited reinsurers:

- (i) section 98.4(a)(1)(i) regarding the tabular cost of insurance,
- (ii) section 98.4(a)(5) regarding immediate payment of claims,
- (iii) section 98.4(d) regarding the cash surrender value floor, and
- (iv) section 98.7(a) regarding general requirements for reserves for universal life insurance policies.

(2) Policies Other Than Universal Life or Variable Life Insurance Policies

The following requirements of this Part shall apply for all statements filed after the effective date of this Part to all policies other than universal life insurance policies or variable life insurance policies issued before the relevant date of subdivision (d) of this section (i.e., January 1, 1994 or, for certain policies issued or assumed by accredited reinsurers, January 1, 1995) by licensed life insurers, fraternal benefit societies, and accredited reinsurers:

- (i) section 98.4(a)(1) regarding the tabular cost of insurance and unitary reserves,
- (ii) section 98.4(a)(4) regarding indeterminate premium policies,
- (iii) section 98.4(a)(5) regarding immediate payment of claims,
- (iv) section 98.4(b) regarding deficiency reserves, except section 98.4(b)(4),
- (v) section 98.4(d) regarding the cash surrender value floor,
- (vi) section 98.4(f) regarding yearly renewable term reinsurance,
- (vii) section 98.4(g) regarding an optional alternative method of unitary reserves,
- (viii) section 98.4(h) regarding the use of the policy fee with gross premiums, and
- (ix) section 98.4(j) regarding attained age yearly renewable term insurance, and
- (x) section 98.4(k) regarding policies with market value adjustments.

(3) For non-level premium term life insurance policies for which basic reserves are calculated using the 1958 CSO Table, the procedures of section 98.4(g)(1)(i) through (iv) shall be applied.

(4) Where the requirements of this subdivision would produce reserves lower than those previously calculated by an insurer for policies issued prior to the relevant dates specified in subdivision (d) of this section, such insurer may, with the approval of the superintendent, adopt lower reserves, but in no case lower than the minimum required reserves.

(f) This Part shall only apply to group life insurance certificates during the period for which there is either a stated or implied schedule of maximum gross premiums, the payment of which guarantees that coverage will remain in force during such period.

(g) The requirements for universal life insurance reserves are specified in section 98.7.

(h) The requirements for variable life insurance reserves are specified in section 98.8

(i) Where the requirements of this Part for policies issued on or after January 1, 2000 would produce reserves lower than those previously calculated by an insurer for policies issued prior to that date, such insurer may adopt lower reserves. However, the total reserves for policies for which

reserves are calculated using the 1980 CSO Table shall in no case be lower than the minimum required reserves for policies issued on or after January 1, 2000. Unless previously provided, the insurer shall notify the superintendent within 45 days after effective date of this Part, whether the reserves for policies issued prior to January 1, 2000, are so determined. That notification shall include basic reserves and deficiency reserves, gross and net of reinsurance, before and after such determination. After 45 days after the effective date of this Part, such adoption will require prior approval by the superintendent.

Section 98.3 Definitions

As used in this Part, the following terms shall have the following meanings:

(a) "Basic reserves" means reserves calculated in accordance with the principles of section 4217 of the Insurance Law, as interpreted by this Part.

(b) "Commissioners Reserve Valuation Method" means the method defined in section 4217(c)(6) of the Insurance Law or, in the case of policies subject to section 98.6 of this Part, as set forth in section 98.6 of this Part, based on section 4217(c)(6)(C) of the Insurance Law.

(c) "Contract Segmentation Method" shall have the meaning set forth in section 98.5 of this Part.

(d) "Deficiency reserves" means the excess of minimum reserves calculated in accordance with the principles of section 4218 of the Insurance Law, as interpreted by this Part, over basic reserves.

(e) "Gross premium" means the premium for life insurance and endowment benefits, and does not include the premium for policy riders such as accidental death benefits.

(f) "Guaranteed gross premiums" means the premiums under a policy of life insurance that are guaranteed and determined at issue.

(g) "Indeterminate premium policy" means a life insurance policy other than a universal life insurance policy, whether participating or non-participating, which provides for future premium determination, the amounts of which are to be determined by the insurance company based on then estimates of future experience, and which provides a schedule of guaranteed gross premiums and a schedule of current gross premiums. Unless otherwise stated, for the purpose of applying this Part, the guaranteed gross premiums shall be considered the gross premiums.

(h) "Initial current gross premium scale" for an indeterminate premium policy means the schedule of gross premiums, based on current assumptions at time of policy issue, that would be payable if there were no subsequent prospective readjustments to the rate of premiums.

(i) "Maximum valuation interest rates" means the interest rates, defined in section 4217(c)(4) of the Insurance Law, allowed as the maximum permissible rates for the valuation of life insurance

policies. The guarantee duration is the maximum number of years the life insurance can remain in force on a basis guaranteed in the policy or under options to convert to plans of life insurance with premium rates or nonforfeiture values or both which are guaranteed in the original policy.

(j) "Minimum mortality standards" means the standards prescribed in section 4217(c)(2)(A) of the Insurance Law and in regulations, including this Part, promulgated pursuant to such section.

(k) "Policy" means an individual life insurance policy or a group life insurance certificate.

(l) "Segmented Reserves" shall have the meaning set forth in section 98.6 of this Part.

(m) "Superintendent" means the Superintendent of Insurance of the State of New York and any employee of the Department of Insurance authorized to act on behalf of the superintendent.

(n) "Unitary reserves" means the present value of all future guaranteed life insurance and endowment benefits to the mandatory expiry date of the policy less the present value of all future modified net premiums to such date, where:

(1) the modified net premiums of a policy shall be a uniform percentage of the respective guaranteed gross premium whereby the present value, at the date of issue of the policy, of the modified net premiums shall be equal to the sum of the then present value of guaranteed life insurance and endowment benefits provided for by the policy and the excess of (i) over (ii), as follows:

(i) A net level premium equal to the present value, at the date of issue, of such benefits provided for after the first policy year, divided by the present value, at the date of issue, of the greater of (a) an annuity of one per year payable on the first and each subsequent anniversary on which a premium falls due or (b) an annuity of the guaranteed gross premium payable on the first and subsequent anniversary, divided by the guaranteed gross premium payable at issue; provided, however, that such net level annual premium shall not exceed the net level annual premium on the nineteen year premium whole life plan insurance of the same amount at an age one year higher than the age at issue of the policy.

(ii) A net one year term premium for such benefits provided for in the first policy year.

(2) any negative terminal reserves are set to zero in determining reserves actually held; and

(3) the interest rates used in the present value calculations for any policy shall not exceed the maximum valuation interest rates, determined using a guarantee duration equal to the maximum number of years the life insurance can remain in force on a basis guaranteed in the policy or under options to convert to plans of life insurance with premium rates or nonforfeiture values or both which are guaranteed in the original policy.

(o) "Universal life insurance policy" means a policy, other than a variable life insurance policy, which provides that in addition to any minimum benefits guaranteed or based on the guaranteed factors in the policy, additional amounts are credited to the policy as determined by the insurance company based on then estimates of future experience. Additional amounts means interest credits

which are higher than guaranteed in the policy and/or mortality charges which are lower than guaranteed in the policy and/or expense charges which are lower than guaranteed in the policy.

(p) "Variable life insurance policy" means a policy in which part of the policy provides benefits, the amount or duration of which varies according to the investment experience of any separate account or accounts.

(q) "Variable universal life insurance policy" means a variable life insurance policy which provides that in addition to any minimum benefits guaranteed or based on the guaranteed factors in the policy, additional amounts are credited to the policy as determined by the insurance company based on then estimates of future experience. Additional amounts means interest credits which are higher than guaranteed in the policy and/or mortality charges which are lower than guaranteed in the policy and/or expense charges which are lower than guaranteed in the policy.

(r) "1980 CSO Table With or Without Ten-Year Select Mortality Factors" means that mortality table incorporated into the 1980 amendments to the NAIC Standard Valuation Law, referred to as "the Commissioners 1980 Standard Ordinary Mortality Table With or Without Ten-Year Selection Factors", as well as variations of such table adopted by the superintendent in Parts 47 and 57 of this Title.

Section 98.4 General requirements for all life insurance policies subject to this part unless stated otherwise

(a) Basic Reserves

(1) Basic reserves actually held shall never be less than the greatest of:

(i) the tabular cost of insurance (i.e., the valuation mortality rate multiplied by the death benefit and discounted using the valuation interest rate) for (a) the balance of the policy year, if mean reserves are used, based on the 1980 CSO Table With or Without Ten-Year Select Mortality Factors and the valuation interest rate used for basic reserves or (b) the balance of the current modal period or to the paid-to-date, if later, if mid-terminal reserves are used, based on the 1980 CSO Table With or Without Ten-Year Select Mortality Factors and the valuation interest rate used for basic reserves, or

(ii) the unitary reserves, or

(iii) for policies issued after the relevant dates of section 98.2(d) and subject to section 98.6 of this Part, basic segmented reserves.

The balance referred to in (i) above may be exact for each policy or an average based on an assumed average anniversary date.

(2) Special Optional Minimum Mortality Standard for Basic Reserves for policies issued before January 1, 2000

At the election of the company for policies issued on or after the relevant date of section 98.2(d) of this Part, but before January 1, 2000, under any one or more specified plans of life insurance, the minimum mortality standard for basic unitary and basic segmented reserves (but not for tabular cost of insurance) may be calculated using the 1980 CSO Tables Without Ten-Year Select Mortality Factors and

(i) 150 percent of the Base Valuation Selection Factors shown in the Appendix 23 to this Part, but round the result to the nearest integer (e.g., 52.7 percent becomes 53 percent) and set equal to 100 percent any factor that exceeds 100 percent, or

(ii) alternative sets of mortality select factors subject to the approval of the superintendent so long as

(a) such sets of factors do not exceed fifteen years,

(b) such sets of factors do not decrease with duration,

(c) each factor is not less than the corresponding factor in accordance with (i) above, and

(d) each factor is not greater than 100 percent.

(3) Special Optional Minimum Mortality Standard for Basic Reserves for policies issued on January 1, 2000 or later

At the election of the company for policies issued on or after January 1, 2000, under any one or more specified plans of life insurance, the minimum mortality standard for basic reserves (but not for tabular cost of insurance) may be calculated using the 1980 CSO Tables Without Ten-Year Select Mortality Factors and the select mortality factors shown in Appendix 24 to this Part.

(4) Basic reserves for indeterminate premium policies shall be based on the guaranteed gross premium scale.

(5) Reserve for Immediate Payment of Claims

(i) Reserves based on either fully continuous functions or on semi-continuous functions where the death portion reflects approximately one half of one year's interest at the valuation rate of interest are considered as making appropriate provision for immediate payment of claims.

(ii) Where basic reserves are based on curtate functions with no provision for immediate payment of claims:

(a) For any policy where the contract or company practice calls for payment of death claims immediately upon receipt of due proof of death of the insured, the death portion of curtate reserves shall be increased by one third of one year's interest at the valuation rate of interest. Approximations may be used to split the total curtate reserves into the death portion and the pure endowment portion.

(b) For any policy where the contract or company practice provides for payment of interest on the death proceeds from date of death to date of payment, the death portion of curtate reserves shall be increased by one half of one year's interest at the valuation rate of interest. Approximations may be used to split the total curtate reserves into the death portion and the pure endowment portion.

(iii) The reserve for immediate payment of claims shall be considered a part of basic reserves.

(b) Deficiency Reserves

(1) This subdivision shall apply to any policy for which the gross premium at any future duration is less than the corresponding modified net premium calculated on the basis of the commissioners reserve valuation method, and using the maximum allowable valuation interest rate and the minimum mortality standards allowable for deficiency reserve purposes.

(2) Deficiency reserves shall be calculated for each policy subject to this subdivision as the excess, if greater than zero, of quantity A, as defined below, over basic reserves.

- (3) Quantity A shall be determined by recalculating the basic reserves for the policy
- (i) using: (a) the Commissioners Reserve Valuation Method, (b) the maximum allowable valuation interest rate and (c) the minimum mortality standards allowable for calculating deficiency reserves, and
 - (ii) replacing the modified net premium by the gross premium for the policy in each contract year for which the modified net premium exceeds the gross premium.

(4) Special Optional Minimum Mortality Standards for Deficiency Reserves for Policies Issued before January 1, 2000

At the election of the company, for policies issued after the relevant date of section 98.2(d) of this Part, but before January 1, 2000, under any one or more specified plans of insurance, the minimum mortality standard for quantity A may be calculated using the 1980 CSO Tables Without Ten-Year Select Mortality Factors and

- (i) 120 percent of the Base Valuation Selection Factors shown in Appendix 23 to this Part, but round the result to the nearest integer and set equal to 100 percent any factor that exceeds 100 percent, or

- (ii) 150 percent of the Base Valuation Selection Factors shown in Appendix 23 to this Part, but round the result to the nearest integer and set equal to 100 percent any factor that exceeds 100 percent, or

- (iii) alternative sets of mortality factors subject to the approval of the superintendent so long as

- (a) such sets of factors do not exceed fifteen years,

- (b) such sets of factors do not decrease with duration,

- (c) each factor is not less than the corresponding factor in accordance with (i) above, and

- (d) each factor is not greater than 100 percent.

(5) Special Optional Minimum Mortality Standard for Deficiency Reserves for Policies Issued on or after January 1, 2000

At the election of the company, for policies issued on or after January 1, 2000 under any one or more specified plans of insurance, the minimum mortality standard for quantity A may be calculated using the 1980 CSO Tables Without Ten-Year Select Mortality Factors and the select mortality factors shown in Appendix 24 to this Part. For all such specified plans of insurance on which the company made this election, the company may choose to multiply the resulting mortality rates in the first segment by X percent (X which refers to a percentage is not the same as x which refers to issue age), subject to the following conditions:

- (i) X may vary by policy year, policy form, underwriting classification, issue age, or any other policy factor expected to affect mortality experience;

- (ii) X shall not be less than twenty percent (20%);

- (iii) X shall not decrease in any successive policy years;

- (iv) X is such that, when using the valuation interest rate used for basic reserves, Item (a) is greater than or equal to Item (b);

- (a) The actuarial present value of future death benefits calculated using the mortality rates resulting from the application of X;

- (b) The actuarial present value of future death benefits calculated using anticipated mortality experience without recognition of mortality improvement beyond the valuation date;

(v) X is such that the mortality rates resulting from the application of X are at least as great as the anticipated mortality experience, without recognition of mortality improvement beyond the valuation date, in each of the first five (5) years after the valuation date;

(vi) The appointed actuary shall increase X at any valuation date where it is necessary to continue to meet all the requirements of this paragraph;

(vii) The appointed actuary may decrease X at any valuation date as long as X does not decrease in any successive policy years and as long as it continues to meet all the requirements of this paragraph;

(viii) The appointed actuary shall specifically take into account the adverse effect on expected mortality and lapsation of any anticipated or actual increase in gross premiums.

(ix) If X is less than 100 percent at any duration for any policy, the following requirements shall be met:

(a) The appointed actuary shall annually prepare an actuarial opinion and memorandum for the entire company for all reserves and related actuarial items tabulated in section 95.8(b)(2) of this title in conformance with the requirements of section 95.8 of this title.

(b) The appointed actuary shall annually opine separately for (1) all policies subject to this regulation issued prior to January 1, 2000, and (2) all policies subject to this regulation issued on or after January 1, 2000, as to whether the mortality rates resulting from the application of X meet the requirements of this paragraph. This opinion shall be supported by an actuarial report, subject to appropriate Actuarial Standards of Practice promulgated by the Actuarial Standards Board of the American Academy of Actuaries. It shall reflect future mortality, without recognition of mortality improvement beyond the valuation date, taking into account relevant emerging experience.

(6) Approved select mortality factors may be used for determining quantity A even if such are not used to determine basic reserves.

(7) Approved smoker/non-smoker valuation mortality tables may be used for determining quantity A so long as actual gross premiums are charged based on smoking status, even if basic reserves are not determined based on smoking status. However, this paragraph does not prohibit the use of smoker valuation mortality tables in calculating reserves for substandard non-smoker lives if appropriate and justifiable.

(8) For indeterminate premium policies, the guaranteed gross premium scale shall be used for purposes of determining quantity A.

(c) Policies sold on an Age Last Birthday basis

In applying the mortality selection factors as derived from the Base Valuation Selection Factors shown in the Appendices to this Part to determine reserves for a policy sold on an Age Last Birthday (ALB) basis, the following methodologies are acceptable:

(1) apply the derived selection factors directly to the ALB version of the 1980 CSO Table Without Ten-Year Select Mortality Factors, or

(2) apply the derived selection factors to the Age Nearest Birthday (ANB) version of the 1980 CSO Table Without Ten Year Select Mortality Factors and use the resulting ANB Valuation Mortality rates to derive the ALB valuation mortality rates.

(d) Cash Surrender Value Floor

(1) The reserve actually held for each policy, other than a variable life insurance policy, (including basic reserves, deficiency reserves, and any reserves held for supplemental benefits that would expire upon contract termination) prior to any reinsurance reserve credit or other reinsurance adjustment must not be less than the cash surrender value at the same duration (including the cash surrender value of the supplemental benefits referred to above) prior to any deductions for policy loans.

(2) For variable life insurance, the reserve held for each policy (including basic reserves, deficiency reserves, and any reserves held for supplemental benefits that would expire upon contract termination) prior to any reinsurance reserve credit or other reinsurance adjustment must not be less than the sum of the cash surrender value prior to any deductions for policy loans (including the cash surrender value of the supplemental benefits referred to above) plus the greater of the one year term reserve required by paragraph 98.8(d)(1) or the attained age level reserve required by section 98.8(d)(2) at the same duration.

(e) Policies With Unusual Patterns of Guaranteed Cash Surrender Values

(1) For purposes of this subdivision, a policy is considered to have an unusual pattern of guaranteed cash surrender values if any future guaranteed cash surrender value exceeds the prior year's guaranteed cash surrender value by more than the sum of

- (i) 110 percent of the scheduled gross premium for that year, and
- (ii) 110 percent of one year's accrued interest on the sum of the prior year's guaranteed cash surrender value and the scheduled gross premium using the nonforfeiture interest rate used for calculating policy guaranteed cash surrender values, and
- (iii) five percent of the first policy year's surrender charge, if any.

This determination is made at policy issue based on policy guarantees.

(2) For any policy with an unusual pattern of guaranteed cash surrender values, the reserves actually held prior to the first unusual guaranteed cash surrender value shall not be less than the reserves according to the Commissioners Reserve Valuation Method, as defined in section 4217(c)(6)(A) of the Insurance Law treating the first unusual guaranteed cash surrender value as a pure endowment and treating the policy as an n year policy providing term insurance plus a pure endowment equal to such cash surrender value, where n is the number of years from the date of issue to the date such cash surrender value is scheduled. The reserves actually held after the first unusual guaranteed cash surrender value shall not be less than the reserves according to the net level premium method treating the first unusual guaranteed cash surrender value, if any, that is scheduled after the valuation date as a pure endowment and treating the policy as an n year policy providing term insurance plus a pure endowment equal to such cash surrender value, where

- (i) n is the number of years from the date of the last unusual guaranteed cash surrender value prior to the valuation date to the earlier of (a) the date of the first unusual guaranteed cash surrender value, if any, that is scheduled after the valuation date or (b) the mandatory expiry date of the policy, and

(ii) the net level premium for a given year during the n year period is equal to the product of the net to gross ratio and the respective gross premium, and

(iii) the net to gross ratio is equal to (a) divided by (b) as follows:

(a) The present value, at the beginning of the n year period, of death and endowment benefits payable during the n year period plus the present value, at the beginning of the n year period, of the next unusual guaranteed cash surrender value, if any, minus the amount of the last unusual guaranteed cash surrender value, scheduled at the beginning of the n year period.

(b) The present value, at the beginning of the n year period, of the scheduled gross premiums payable during the n year period.

(3) All present values shall be calculated using the same valuation mortality and interest rates used to calculate basic reserves otherwise required in accordance with this Part.

(f) Special Optional Exemption for Yearly Renewable Term Reinsurance

(1) At the option of the company, for reserves for yearly renewable term (YRT) reinsurance, the following methodology may be used as an alternative to the requirements of paragraph (a)(1) and subdivision (b) of this section and section 98.6 of this Part:

(i) Calculate the valuation net premium for each future policy year as the tabular cost of insurance for such future year.

(ii) Basic Reserves

Basic reserves shall never be less than the tabular cost of insurance as specified in subparagraph (a)(1)(i) of this section.

(iii) Deficiency Reserves

(a) For each future policy year in which the valuation net premium exceeds the respective gross premium, calculate the excess of the valuation net premium over the respective gross premium.

(b) Deficiency reserves shall never be less than the sum of the present values, at the date of valuation, of the excesses determined in accordance with (a) above.

(iv) Reserves actually held shall never be less than the sum of the basic reserves and the deficiency reserves, as specified in this paragraph.

(2) In the application of subparagraphs (1)(ii) and (1)(iii) above,

(i) the mortality standard shall be the 1980 CSO Table With or Without Ten-Year Select Mortality Factors, and

(ii) the special optional minimum mortality standards for basic reserves and deficiency reserves as defined in this section shall not be used, and

(iii) the maximum valuation interest rates shall be used.

(3) If this election is made, the ceding insurer may not take reserve credit in excess of the reserve set up by the reinsurer.

(4) If this election is made for any reinsurance agreement with a given ceding insurer, this election must be made for all YRT reinsurance agreements effective on or after January 1, 2000 with such ceding insurer.

(5) A reinsurance agreement shall be considered YRT reinsurance for purposes of this subdivision if the mortality risk only is reinsured.

(g) Special Optional Exemption for Certain Policies Issued Prior to the Relevant Dates of Section 98.2(d) and Requirements for Certain 1958 CSO Policies

(1) At the option of the company, for reserves for policies subject to this Part in accordance with section 98.2(e)(2), issued prior to the relevant date of section 98.2(d) of this Part, the following methodology may be used as an alternative to the calculation of unitary reserves as required in paragraph (a)(1) of this section:

(i) Separate the policy into periods where a period is defined as the number of successive years for which gross premiums are level.

(ii) Basic Reserves

(a) Basic reserves shall never be less than the present value of guaranteed life insurance and endowment benefits for the current period less the present value of modified net premiums for such period.

(b) The commissioners reserve valuation method may be used for the first period only. For the second and subsequent periods, the net level premium method shall be used; that is, as of the beginning of given period, the present value of modified net premiums shall equal the present value of guaranteed life insurance and endowment benefits for the period.

(iii) Deficiency Reserves

(a) For each future period (including the current period) in which the modified net premium exceeds the gross premium, calculate the present value, at the date of valuation, of the excess of the modified net premiums for such period over the gross premiums for such period.

(b) Deficiency reserves shall never be less than the sum of the present values, at the date of valuation, of the excesses, determined in accordance with (a) above, for the current period and all future periods.

(iv) Reserves actually held shall never be less than the sum of the basic reserves and the deficiency reserves, as specified in this paragraph.

(v) If this election is made, the methodology in this paragraph shall be applied in determining reserves for all policies subject to this Part in accordance with section 98.2(e)(2) issued prior to the relevant date of section 98.2(d) of this Part.

(2) The procedures of (1)(i) through (iv) above shall be applied in calculating reserves for all non-level premium term life insurance policies for which basic reserves are calculated using the 1958 CSO Table. For deficiency reserves for such policies, the 1980 CSO Table With or Without Select Mortality Factors may be used.

(h) In determining basic reserves or deficiency reserves under the unitary reserve method or the segmented reserve method (as described in section 98.6 of this Part), guaranteed gross premium without policy fee may be used where the calculation involves the guaranteed gross premium but only if the policy fee is a level dollar amount for the entire premium paying period of the policy. In testing for the need for deficiency reserves per paragraphs 98.4(b)(1) and 98.6(b)(1) of this Part, the policy fee may be included even if not included in the actual calculation of basic reserves.

(i) The Base Valuation Selection Factors shown in the Appendices to this Part are sex-distinct. The actual selection factors used in determining basic reserves or deficiency reserves may be gender-blended in accordance with the provisions of Part 47 of this Title.

(j) Special Optional Exemption for Attained-Age-Based Yearly Renewable Term Life Insurance Policies

(1) At the option of the company, for reserves for attained-age-based yearly renewable term (YRT) life insurance policies, the methodology described in paragraph (f)(1) of this section may be used as an alternative to the requirements of paragraph (a)(1) and subdivision (b) of this section and section 98.6 of this Part.

(2) In applying paragraph (1) above, the mortality standard shall be the 1980 CSO Table With or Without Ten-Year Select Mortality Factors. The special optional minimum mortality standards for basic reserves and deficiency reserves as defined in this section shall not be used.

(3) If this election is made, the methodology of paragraph (f)(1) shall be applied in determining reserves for all attained-age-based YRT life insurance policies, unless otherwise approved by the superintendent.

(4) A policy shall be considered an attained-age-based YRT life insurance policy for purposes of this subdivision if it conforms to (i) and (ii) below.

(i) The premium rates (on both the initial current gross premium scale and the guaranteed gross premium scale) for any given year are based on the attained age of the insured such that the rate for any given policy at a given attained age of the insured is independent of the year the policy was issued. For example, the rate for an insured aged 55 in the current year would be the same whether the policy was issued at age 25 (30 years ago) or at age 50 (five years ago).

(ii) The premium rate (on both the initial current premium scale and the guaranteed premium scale) is the same as the premium rate for policies covering all insureds of the same sex, risk class, policy form, and attained age.

(5) For policies that become attained-age-based YRT policies after an initial period of coverage, the methodology of this subdivision may be used if:

(i) The initial period is constant for all insureds of the same sex, risk class, and plan of insurance or the initial period runs to a common attained age for all insureds of the same sex, risk class and plan of insurance; and

(ii) After the initial period of coverage, the policy meets the conditions of paragraph (4) above.

(k) Policies Containing Market Value Adjustments

For policies containing market value adjustments, in addition to the requirements of this Part, the reserve requirements of Part 43 of this Title shall also apply.

(l) Reserves for policies that have changes to guaranteed gross premiums, guaranteed benefits, guaranteed charges, or guaranteed credits that are unilaterally made by the insurer after issue that are effective for more than one year after the date of the change shall be the greatest of the

following: (1) reserves calculated ignoring the guarantee, (2) reserves assuming the guarantee was made at issue, and (3) reserves assuming that the policy was issued on the date of the guarantee.

(m) The superintendent may require that the company document the extent of the adequacy of reserves for specified blocks, including but not limited to policies issued prior to the effective date of this regulation. This documentation may include a demonstration of the extent to which aggregation with other blocks of business is relied upon in the formation of the appointed actuary opinion pursuant to and consistent with the requirements of Regulation 126.

(n) Any provision that keeps the death benefit in force beyond the policy year when, under the other guaranteed terms of the policy, the policy would lapse or the policy values would be zero, must be valued consistently with the principles underlying this regulation. The methods of valuation, if other than those specified in this regulation, must be submitted to the superintendent for approval.

(o) For any policy which guarantees renewal, or conversion to another policy, without evidence of insurability, additional reserves shall be held that account for excess mortality due to antiselection with appropriate margins to cover expenses and risk of moderately adverse deviations in experience.

(p) For any policy for which, in the judgement of the appointed actuary, expected mortality is greater, at any duration, than the 1980 CSO Table Without Ten-Year Select Mortality Factors, additional reserves shall be held that account for excess mortality with appropriate margins to cover expenses and risk of moderately adverse deviations in experience unless not holding such additional reserves is justified by an acceptable actuarial opinion and memorandum in accordance with sections 95.8 and 95.9 of Part 95 of this Title. The justification should be discussed in such memorandum.

(q) This subdivision shall apply to policies assumed under any reinsurance agreement that provides that if reinsurance premiums are increased there will be a corresponding increase in the expense allowance.

(1) For such policies, the reinsurer shall set the guaranteed premium scale to be used for reserve calculations equal to (i) minus (ii), where

(i) is the guaranteed reinsurance premium scale and

(ii) is the corresponding guaranteed increase in expense allowance that would be paid if the guaranteed reinsurance premiums were charged.

(2) Notwithstanding any provision in this Part to the contrary, this subdivision shall apply to all such policies issued on or after January 1, 2000 regardless of the date of the reinsurance agreement.

(r) Where a rider provides for the waiver of future premiums, and/or mortality and expense charges, upon the first death of a last survivor base policy the total reserve for the base policy and rider shall not be less than the greater of: (1) the sum of the reserve for the base policy and the reserve for the rider, treating each as if it were a separate policy and (2) the reserve determined by treating the base policy and the rider as if the combination were a single policy.

(s) For a policy which provides for whole life insurance with the amount of death benefit adjusted periodically with a cost of living index, the value of the minimum reserve at any time shall be

based on the maximum valuation interest rate for the year of issue and an acceptable mortality table for life insurance statutory reserves and based on the death benefit and premium pattern adjusted as provided in the policy by reasonable annual increases based on the index. The present value of future benefits component shall be further adjusted each year by the ratio of the then current amount of death benefit to the initially projected amount of death benefit. If the policy provides for future premiums and such premiums are also adjusted periodically with a cost of living index, the present value of future premiums component shall likewise be further adjusted each year by the ratio of the then current amount of death benefit to the initially projected amount of death benefit. The assumption as to what is a reasonable annual increase in death benefits based on the index must not be less than the maximum valuation interest rate for the year of issue less 1%.

(t) A non-guaranteed premium or other policy cost factor for purposes of calculating reserves will be considered guaranteed if the company is in any way restricted from changing these premiums or other policy cost factors to recognize changes in actual or expected company experience related to this policy. Pre-filing of premiums or other policy cost factors with the superintendent or the insurance supervisor of another state is not considered to be a restriction for the purpose of this subdivision.

(u) All applications of this Part must be consistent with the principles of section 4217 of the Insurance Law and the principles and concepts of this Part. The superintendent shall require additional reserves if it is determined that the calculated reserves are less than those calculated by a proper interpretation of this Part.

Section 98.5 Contract segmentation method

(a) "Contract Segmentation Method" means the method of dividing the period from issue to the mandatory expiry date of a policy into successive segments, with the length of each segment being the period from the end of the prior segment (from policy inception, for the first segment) to the end of the appropriate policy year determined in accordance with subdivision (b) below.

(b) The length of a particular contract segment shall be set equal to the minimum of the value of t for which G_t is greater than R_t (if G_t never exceeds R_t such segment length is deemed to be the number of years from the beginning of the segment to the mandatory expiry date of the policy), where G_t and R_t are defined in paragraphs (1) and (2) below. If GP_{x+k+t} is greater than zero and $GP_{x+k+t-1}$ is equal to zero, G_t shall be deemed to be 1000. If GP_{x+k+t} and $GP_{x+k+t-1}$ are both equal to zero, G_t shall be deemed to be zero.

$$(1) \quad G_t = \frac{GP_{x+k+t}}{GP_{x+k+t-1}}$$

where:

(i) x = original issue age; and

(ii) k = the number of years from the date of issue to the beginning of the particular segment;

and

(iii) $t = 1, 2, \dots$, t is reset to 1 at the beginning of each segment; and

(iv) $GP_{x+k+t-1}$ = the gross premium per thousand of face amount, ignoring policy fees, if such policy fees are a level dollar amount for the entire premium paying period of the policy, for year t of the segment.

$$(2) \quad R_t = \frac{q_{x+k+t}}{q_{x+k+t-1}}, \text{ but not less than one}$$

where:

- (i) x , k , and t are defined in (1) above; and
- (ii) q_{x+k+t} = the valuation mortality rate for deficiency reserves for policy year $k+t+1$, but setting X equal to 1 for this purpose if the mortality standard of section 98.4(b)(5) is elected, except as noted in the next sentence. Where a segment break occurs such that t is the length of the segment and a different valuation mortality table will be used in the next segment (e.g., the table will change from the special optional mortality factors of section 98.4(a)(3) to the 1980 CSO Table Without Ten-Year Select Mortality Factors), then q_{x+k+t} is based on the valuation mortality table used in the current segment, and
- (iii) $q_{x+k+t-1}$ = the valuation mortality rate for deficiency reserves for policy year $k+t$, but setting X equal to 1 for this purpose if the mortality standard of section 98.4(b)(5) is elected, except as noted in the next sentence. Where a segment break has just occurred such that $t = 1$ and a different valuation mortality table is being used in the current segment, then $q_{x+k+t-1}$ is based on the valuation mortality table in the current segment, and
- (iv) at the option of the insurer, R_t may be increased or decreased by one percent in any policy year, but R_t shall not be less than one.

Section 98.6 Minimum reserves for life insurance policies with non-level premiums and/or non-level death benefits

(a) Basic Reserves

(1) Subject also to the requirements of section 98.4 of this Part, basic reserves for each life insurance policy with non-level premiums and/or non-level death benefits shall be the greater of the unitary reserves or the segmented reserves as defined below.

(2) Segmented reserves means the excess, if any, of the present value, at the date of valuation, of all future guaranteed life insurance and endowment benefits to the mandatory expiry date of the policy over the present value of all future modified net premiums to such date. The length of each segment is determined at issue by the Contract Segmentation Method as described in section 98.5 of this Part. All present values shall be calculated using the same mortality and interest rates that were used in applying the Contract Segmentation Method. The modified net premiums within each segment of a policy shall be a uniform percentage of the respective gross premiums within such segment. The segmented reserve shall not be less than the reserve determined using the Commissioners Reserve Valuation Method prescribed in paragraph (3) below.

(3) Commissioners Reserve Valuation Method for Policies with Non-level Premiums and/or Non-level Death Benefits.

(i) Except as otherwise provided in section 4218 of the Insurance Law, reserves according to the Commissioners Reserve Valuation Method for policies with non-level benefits and/or non-level premiums shall be the excess, if any, of the present value, at the date of valuation, of future guaranteed life insurance and endowment benefits provided for by such policies over the then present value of any future modified net premiums therefor. The modified net premiums shall be determined in accordance with the remainder of this paragraph.

(ii) The modified net premiums for the first segment shall be such uniform percentage of the respective guaranteed gross premiums within the first segment that the present value, at the date of issue of the policy, of the modified net premiums in the first segment shall be equal to the sum of the then present value of guaranteed life insurance and endowment benefits provided for in the first segment plus the present value of any unusual guaranteed cash value occurring at the end of the segment less any unusual guaranteed cash value occurring at the start of the segment, plus the excess of item (a) over item (b), as follows:

(a) A net level premium equal to the present value, at the date of issue, of such benefits provided for in the first segment after the first policy year, divided by the present value, at the date of issue, of the greater of (1) an annuity of one per year payable on the first and each subsequent anniversary within the first segment on which a premium falls due or (2) an annuity of the guaranteed gross premium payable on the first and each subsequent anniversary within the first segment on which a premium falls due, divided by the guaranteed gross premium payable at issue; provided, however, that such net level annual premium shall not exceed the net level annual premium on the nineteen year premium whole life plan insurance of the same amount at an age one year higher than the age at issue of the policy.

(b) A net one year term premium for such benefits provided for in the first policy year.

(iii) The modified net premiums for the second and subsequent segments shall be calculated by the net level premium method; that is, they shall be such uniform percentage of the respective guaranteed gross premiums within the particular segment that the present value of modified net premiums as of the beginning of the segment shall equal the present value of guaranteed life insurance and endowment benefits for the segment.

(iv) At the option of the insurer, in calculating modified net premiums in accordance with subparagraphs (ii) and (iii) of this paragraph, the adjustment in either (a) or (b) below may be made:

(a) treat the basic unitary reserve, if greater than zero, applicable at the end of each segment as a pure endowment and subtract the basic unitary reserve, if greater than zero, applicable at the beginning of each segment (other than the first segment) from the present value of guaranteed life insurance and endowment benefits for such segment.

(b) treat the guaranteed cash value, if greater than zero, applicable at the end of each segment as a pure endowment and subtract the guaranteed cash value, if greater than zero, applicable at the beginning of each segment (other than the first segment) from the present value of guaranteed life insurance and endowment benefits for such segment.

(4) The special optional minimum mortality standard for basic reserves as defined in sections 98.4(a)(2) and 98.4(a)(3) may only be used for determining valuation mortality rates for the first segment. Valuation mortality rates for the second and later segments must be obtained from (i) the 1980 CSO Tables Without Ten-Year Select Mortality Factors or (ii) if the first segment is less than ten years, the 1980 CSO Tables with Ten-Year Select Mortality Factors may be used through the end of the tenth policy year.

(5) Unitary reserves must be determined using the same valuation interest rate and the same valuation mortality rates as used for determining segmented reserves.

(6) The interest rate used in the present value calculations for any policy shall not exceed the maximum valuation interest rate.

(b) Deficiency Reserves

(1) This subdivision shall apply to any policy for which the gross premium at any future duration is less than the corresponding modified net premium calculated on the basis of the commissioners reserve valuation method using the method (unitary or segmented) that produces the greater basic reserve and using the maximum allowable valuation interest rate and the minimum mortality standards allowable for deficiency reserves.

(2) Deficiency reserves, if any, shall be calculated for each policy as the excess of quantity A over basic reserves, where quantity A shall be determined by recalculating basic reserves using the commissioners reserve valuation method and using the maximum allowable valuation interest rate and the minimum mortality standard allowable for deficiency reserves and replacing the modified net premium by the gross premium for the policy for each contract year for which the modified net premium exceeds the gross premium. The quantity A should be calculated on a unitary basis if basic reserves are unitary, and on a segmented basis if basic reserves are segmented. If unitary and segmented basic reserves are equal, deficiency reserves should be calculated on a segmented basis. When deficiency reserves are calculated on a segmented basis the length of each segment for quantity A segmented reserves shall equal the length of the corresponding segment for basic segmented reserves. Quantity A segmented reserves shall reflect benefits and premiums in the current segment and all future segments.

(3) The following optional provision applies to policies issued after the relevant date of section 98.2(d) but before January 1, 2000. If and only if the length of the first segment for the basic segmented reserves, as determined by the Contract Segmentation Method, is not greater than five years, then, for the first segment only, gross premiums payable in the first segment need not be substituted for modified net premiums in calculating quantity A segmented reserves or quantity A unitary reserves even if such gross premiums are less than the corresponding modified net premiums. Gross premiums payable in the second and later segments must be substituted for modified net premiums in calculating quantity A if such gross premiums are less than the corresponding modified net premiums.

(4) The special optional minimum mortality standard for deficiency reserves as defined in sections 98.4(b)(4) and 98.4(b)(5) may only be used for determining valuation mortality rates for the first segment. Valuation mortality rates for the second and later segments must be obtained from (i) the 1980 CSO Tables Without Ten-Year Select Mortality Factors or (ii) if the first segment is less than ten years, the 1980 CSO Tables with Ten-Year Select Mortality Factors may be used through the end of the tenth policy year.

(c) Where the conditions of section 4217(c)(6)(B) of the Insurance Law (pertaining to a special endowment and/or cash surrender benefit) apply, reserves shall not be less than the reserves determined in accordance with such section.

(d) Exemption from Unitary Reserves for Certain Juvenile Policies
Unitary basic reserves and unitary deficiency reserves need not be calculated for a policy if the following conditions are met:

- (1) at issue, the insured is age 24 or younger, and
- (2) until the insured reaches the end of the juvenile period
 - (i) both the initial current and gross premium scales and death benefits are level, and
 - (ii) there are no cash surrender values, and
- (3) after the end of the juvenile period:
 - (i) both the initial current and gross premium scales are level for the remainder of the premium paying period, and
 - (ii) death benefits are level for the remainder of the life of the policy, and
- (4) the juvenile period ends at age 25 or earlier.

(e) Exemption from Unitary Reserves for Certain n-Year Renewable Term Life Insurance Policies

Unitary basic reserves and unitary deficiency reserves need not be calculated for a policy if the following conditions are met:

(1) the policy consists of a series of n-year periods (including the first period and renewal periods) where n is the same for each period, except that for the final renewal period, n may be truncated or extended to reach the expiry age, provided that this final renewal period is less than 10 years and less than twice the size of the earlier n-year periods, and, for each n-year period, the premium rate (on both the initial current gross premium scale and the guaranteed gross premium scale) is level, and

(2) the guaranteed gross premium in all n-year periods is not less than the corresponding modified net premium calculated based on the 1980 CSO Table With or Without Ten-Year Select Mortality Factors, and

(3) there are no cash surrender values in any policy year.

Section 98.7 Minimum reserves for universal life insurance policies

(a) General Requirements

(1) In addition to the requirements of this subdivision, the requirements of sections 98.4(a)(1)(i), 98.4(a)(2), 98.4(a)(3), 98.4(a)(5), 98.4(b)(4), 98.4(b)(5), 98.4(b)(6), 98.4(b)(7), 98.4(c),

98.4(d), 98.4(i), 98.4(k), 98.4(l), 98.4(m), 98.4(n), 98.4(o), 98.4(p), 98.4(q), 98.4(r), 98.4(s), 98.4(t), and 98.4(u) shall apply to universal life insurance policies. Variable universal life insurance policies are also subject to section 98.8.

(2) "Fixed premium universal life insurance policy" means a universal life insurance policy other than a flexible premium universal life insurance policy.

(3) "Flexible premium universal life insurance policy" means a universal life insurance policy that permits the policyholder to vary, independently of each other, the amount or timing of one or more premium payments.

(4) "Guaranteed maturity premium" for flexible premium universal life insurance policies shall be that level gross premium, paid at issue and periodically thereafter over the period during which premiums are allowed to be paid, which will mature the policy on the latest maturity date, if any, permitted under the policy (otherwise at the highest age in the valuation mortality table), for an amount which is in accordance with the policy structure. The guaranteed maturity premium is calculated at issue based on all policy guarantees at issue. The guaranteed maturity premium for fixed premium universal life insurance policies shall be the premium defined in the policy which at issue provides the minimum policy guarantees.

(5) "Guaranteed maturity fund" at any duration is that amount which, together with future guaranteed maturity premiums, will mature the policy based on all policy guarantees at issue.

(6) "Account Value" for purposes of this section means the amount to which interest credits and/or mortality charges and/or expense charges are made under a universal life insurance policy.

(7) Basic Reserves

(i) Basic reserves shall never be less than the greater of (a) net level premium reserves less the unamortized expense allowance, or (b) the cash surrender value.

(ii) Net level premium reserves for the purpose of this subdivision shall equal $(A-B)r$ where A, B, and r are defined below.

(a) A = the present value of all future guaranteed benefits at the date of valuation.

(b) $B = (PVFB/a_x) a_{x+t}$ where

(1) PVFB is the present value of all benefits guaranteed at issue assuming future guaranteed maturity premiums are paid by the policyholder and taking into account all guarantees contained in the policy or declared by the insurer, and

(2) a_x and a_{x+t} are present values of an annuity of one per year payable on policy anniversaries beginning at ages x and x+t, respectively, and continuing until the highest attained age at which a premium may be paid under the policy, and

(3) x is the issue age, and

(4) t is the duration of the policy.

(c) $r = one$, unless the policy is a flexible premium policy and the account value is less than the guaranteed maturity fund, in which case r is the ratio of the account value to the guaranteed maturity fund.

(iii) The unamortized expense allowance shall equal $(C-D)(a_{x+t}/a_x)r$ where

(a) a_{x+t} , a_x and r are as defined in (ii) above,

(b) C = a net level annual premium equal to the present value, at the date of issue based on the plan of insurance defined at issue by the guaranteed maturity premiums and all guarantees contained in the policy or declared by the insurer, of life insurance and endowment benefits provided for after the first policy year, divided by the present value, at the date of issue, of an annuity of one per annum payable on the first and each subsequent anniversary of such policy on which a premium is allowed to be paid; provided, however, that such net level annual premium shall not exceed the net level annual premium on the nineteen year premium whole life plan for insurance of the same amount at an age one year higher than the age at issue of such policy.

(c) D = a net one year term premium for such benefits provided for in the first policy year.

(iv) In the case of structural changes initiated by the policyholder which are separate from the automatic workings of the policy, expense allowances associated with such changes shall be amortized on a basis consistent with subparagraph (iii) above.

(v) Future guaranteed benefits are determined by (a) projecting the greater of the guaranteed maturity fund and the account value, taking into account future guaranteed maturity premiums, if any, and using all guarantees of interest, mortality, and expense deductions contained in the policy or declared by the insurer; and (b) taking into account any benefits guaranteed in the policy or by declaration which do not depend on the account value.

(vi) All present values shall be determined using (a) the maximum valuation interest rate based on the date of issue of the policy and (b) the minimum mortality standards allowable for calculating basic reserves.

(vii) In lieu of the methods described in subparagraphs (i) through (vi) above, for policies issued prior to January 1, 2000, a company may use the mean of the cash surrender value and the account value as the basic reserve.

(8) Deficiency Reserves

(i) This paragraph shall apply to any universal life insurance policy for which the guaranteed maturity premium at any future duration is less than the corresponding valuation net premium calculated as $(PVFB+C-D)/a_x$ using the maximum allowable valuation interest rate and the minimum mortality standards allowable for calculating deficiency reserves.

(ii) Deficiency reserves shall be calculated as the excess, if any, of alternate minimum reserves as defined below over basic reserves.

(iii) Alternate minimum reserves shall be determined by calculating the basic reserves as described in subparagraphs (7)(i) through (vi) above for the policy

(a) using:

(1) the method described in subparagraphs (7)(i) through (vi) above,

(2) the maximum allowable valuation interest rate, and

(3) the minimum mortality standards allowable for calculating deficiency reserves, and

(b) replacing the valuation net premium by the guaranteed maturity premium in each contract year for which the valuation net premium exceeds the guaranteed maturity premium.

(b) Additional requirements for universal life insurance policies that contain provisions resulting in the ability of a policyholder to keep a policy in force over a secondary guarantee

(1) Policies with Specified Premiums

(i) "Secondary guarantee" for purposes of this paragraph means a guarantee that the policy will remain in force at the original schedule of benefits subject only to the payment of specified

premiums. For policies issued prior to January 1, 2000, secondary guarantees not exceeding five years are excluded.

(ii) "Secondary guarantee period" for purposes of this paragraph means the period for which the policy is guaranteed to remain in force subject only to the payment of the specified premiums. When a policy contains more than one secondary guarantee, the minimum reserve shall be the greatest of the respective minimum reserves at that valuation date of each unexpired secondary guarantee, ignoring all other secondary guarantees. Reserves for policies for which any secondary guarantee has been unilaterally changed by the insurer after issue shall be the greatest of the following: (a) reserves calculated ignoring the after-issue guarantee, (b) reserves assuming the after-issue guarantee was made at issue, and (c) reserves assuming that the policy was issued on the date of the after-issue guarantee.

(iii) "Specified premiums" for purposes of this paragraph means the premiums specified in the policy, the payment of which guarantees that the policy will remain in force at the original schedule of benefits (or, in the case of a structural change initiated by the policyholder, the new schedule of benefits after such change) but which otherwise would be insufficient to keep the policy in force in absence of such guarantee if policy maximum mortality and expense charges and minimum guaranteed interest credits were made and any applicable surrender charges were assessed. Specified premiums may be stated directly or implied. For example, specified premiums may be implied via a guarantee that the policy will not lapse if the accumulation of premiums less withdrawals as of any given date exceeds a certain dollar amount. Such accumulation may or may not reflect interest and/or deductions for cost of insurance or expense.

(iv) Basic reserves for the specified premium secondary guarantees.

Basic reserves for the specified premium secondary guarantees shall be determined in accordance with sections 98.4 through 98.6 of this Part treating the policy as a policy with expiry at the end of the secondary guarantee period and using the specified premiums as the gross premiums. The minimum statutory valuation mortality and interest assumptions can be used. The specified premiums shall be used as the gross premiums for the application of the Contract Segmentation Method. Unitary reserves shall be calculated assuming the end of the secondary guarantee period is the mandatory expiry date of the policy.

(v) Deficiency Reserves for the specified premium secondary guarantees.

Deficiency reserves for the specified premium secondary guarantees, if any, shall be calculated for the secondary guarantee period in accordance with sections 98.4 through 98.6 of this Part treating the policy as a policy with expiry at the end of the secondary guarantee period and using the specified premiums as the gross premiums.

(vi) The minimum reserve during the secondary guarantee period shall be the greater of:

(a) the basic reserve for the specified premium secondary guarantees plus the deficiency reserve for the specified premium secondary guarantees, if any; and

(b) the minimum reserve otherwise required in accordance with this section.

(vii) This paragraph shall not apply to any secondary guarantee satisfying all of the following requirements:

(a) Secondary guarantee period is five (5) years or less;

(b) Specified premium for the secondary guarantee period is not less than the net level reserve premium for the secondary guarantee period based on the 1980 CSO Tables Without Ten-Year Select Mortality Factors and the applicable valuation interest rate; and

(c) The initial surrender charge is not less than 100 percent of the first year annualized specified premium for the secondary guarantee period.

(2) Policies with Significant Cost of Insurance Guarantees

(i) A policy is considered as having a "secondary guarantee" for purposes of this paragraph if the minimum premium, at any future duration, is less than the corresponding one-year valuation premium calculated using the maximum valuation interest rate and the 1980 CSO Table With or Without Ten-Year Select Mortality Factors. The special optional minimum mortality standards as defined in section 98.4 shall not be used for the purpose of this subparagraph. For policies issued prior to January 1, 2000, secondary guarantees not exceeding five years are excluded.

(ii) The "minimum premium" for purposes of this paragraph means the premium which if paid into a policy with a zero account value at the beginning of the policy year, would produce a zero account value at the end of that policy year assuming the guaranteed mortality and expense charges are assessed and assuming the guaranteed interest rate is credited. The minimum premiums for all policy years are calculated at issue, and at the time of any structural changes initiated by the policyholder which are separate from the automatic workings of the policy.

(iii) The "one-year valuation premium" for purposes of this paragraph means the tabular cost of insurance based on the original schedule of benefits (or, in the case of a structural change initiated by the policyholder, the new schedule of benefits after such change) for a given contract year. The one-year valuation premiums for all contract years are calculated at issue, and at the time of any structural changes initiated by the policyholder which are separate from the automatic workings of the policy.

(iv) Basic Reserves for the Significant Cost of Insurance Secondary Guarantees
Basic reserves for the significant cost of insurance secondary guarantees shall be determined in accordance with sections 98.4 through 98.6 of this Part using the specified premiums (as defined in paragraph (1) above), if any, or otherwise the minimum premiums as the gross premiums. The minimum statutory valuation mortality and interest assumptions can be used. The specified premiums (as defined in paragraph (1) above), if any, or otherwise the minimum premiums shall be used as the gross premiums for the application of the Contract Segmentation Method.

(v) Deficiency Reserves for the Significant Cost of Insurance Secondary Guarantees
Deficiency reserves for the significant cost of insurance secondary guarantees, if any, shall be calculated in accordance with sections 98.4 through 98.6 of this Part using the specified premiums (as defined in paragraph (1) above), if any, or otherwise the minimum premiums as the gross premiums.

(vi) The minimum reserve shall be the greater of:

- (a) the basic reserve for the significant cost of insurance secondary guarantees plus the deficiency reserve for the significant cost of insurance secondary guarantees, if any; and
- (b) the minimum reserve otherwise required in accordance with this section.

(c) Reserves for any policy that guarantees other than payment of cash surrender value at age 100 shall be calculated, before and after age 100, assuming the policy endows at age 100 for the death benefit at age 100. For example, the policy guarantees continuation beyond age 100 for the full face amount so long as the cash surrender value is greater than zero at age 100. For purposes of this Part, the specified premiums in such case are the minimum premiums required to achieve such guarantee.

Section 98.8 Minimum reserves for variable life insurance policies

(a) Reserve liabilities for variable life insurance policies shall be established in accordance with provisions of section 4240(d) of the Insurance Law, in accordance with actuarial procedures that recognize the variable nature of the benefits provided and any mortality guarantees. The requirements of this section apply to policies issued on and after January 1, 2000 and supersede the requirements of section 54.8 of this Title for such policies.

(b) In addition to the requirements of this subdivision, the requirements of sections 98.4(a)(1)(i), 98.4(a)(3), 98.4(a)(4), 98.4(a)(5), 98.4(b)(5), 98.4(b)(6), 98.4(b)(7), 98.4(b)(8), 98.4(c), 98.4(d), 98.4(e), 98.4(h), 98.4(i), 98.4(l), 98.4(m), 98.4(n), 98.4(o), 98.4(p), 98.4(q), 98.4(r), 98.4(s), 98.4(t) and 98.4(u) shall apply to variable life insurance policies. Variable universal life insurance policies are also subject to section 98.7. In projecting future benefits for determining basic reserves and deficiency reserves for variable universal life products, use the calendar year statutory valuation interest rate for life insurance policies with guarantee durations in excess of twenty years.

(c) The reserve for a variable life insurance policy shall not be less than the greater of (i) the sum of the reserves required by subdivisions (a), (b), and (d) of this section ignoring paragraph (d)(2) of this section or (ii) the sum of reserves required by subdivisions (a) and (b) of this section ignoring any guaranteed minimum death benefit and the reserves required by subdivision (d) of this section.

(d) Reserves for the guaranteed minimum death benefit for each variable life insurance policy shall be the reserve needed to provide for the contingency of death occurring when the guaranteed minimum death benefit exceeds the death benefit that would be paid in the absence of the guarantee, and shall be maintained in the general account of the insurer and shall not be less than the greater of the reserves required by paragraph (1) below or the reserves required by paragraph (2) below:

(1) The term cost, if any, covering a period of one full year from the valuation date or, if less, covering the period provided for in the guarantee not otherwise provided for by the reserves held in the separate account assuming an immediate one-third depreciation in the current value of the assets in the separate account followed by a net investment return equal to the assumed investment rate or, if no assumed investment rate is specified in the policy, the calendar year statutory valuation interest rate for life insurance policies with guarantee durations in excess of twenty years; or

(2) The "attained age level" reserve shall be no less than zero and shall equal the "residue," as described in subparagraph (i) below, of the prior year's "attained age level" reserve on the contract, with any such "residue" increased or decreased by a payment computed on an attained age basis as described in subparagraph (ii) below.

(i) The "residue" of the prior year's "attained age level" reserve shall not be less than zero and shall be determined by adding interest at the valuation interest rate to the prior year's reserve, deducting the tabular claims based on the "excess," if any, of the guaranteed minimum death benefit over the death benefit that would be payable in the absence of a guarantee, and dividing the net result by the tabular probability of survival. The "excess" referred to in the preceding sentence shall be based on the actual level of death benefits that would have been in effect during the preceding year in the absence of the guarantee, taking appropriate account of the reserve assumptions regarding the distribution of death claim payments over the year.

(ii) The payment referred to in this paragraph shall be computed so that the present value of a level payment of such amount each year over the future period for which charges for this risk will be

collected under the policy, is equal to (A) minus (B) minus (C), where (A) is the present value of the future guaranteed minimum death benefits, (B) is the present value of the future death benefits that would be payable in the absence of such guarantee, and (C) is any "residue," as described in subparagraph (i), of the prior year's "attained age level" reserve. The level payment is calculated by dividing the result of (A) minus (B) minus (C) by an annuity of one dollar for the period the premiums or charges are collected, but not beyond the duration the account value would go to zero. If no future charges for this risk will be collected under the contract, the payment shall equal (A) minus (B) minus (C). The amounts of the future death benefits referred to in (B) shall be computed assuming a net investment return of the separate account which may differ from the assumed investment rate or the valuation interest rate but in no event may exceed the maximum interest rate permitted for the valuation of life policies.

(3) The valuation interest rate and mortality table used in computing the two minimum reserves described in paragraphs (1) and (2) of this subdivision shall conform to permissible standards for the valuation of life insurance contracts. In determining such minimum reserves, the company may employ suitable approximations and estimates, including but not limited to groupings and averages.

(e) Reserves for all fixed incidental insurance benefits and any guarantees associated with variable incidental insurance benefits shall be maintained in the general account, and reserve liabilities for all variable aspects of the variable incidental insurance benefits shall be maintained in a separate account, in amounts determined in accordance with the actuarial procedures appropriate to the benefit.

Section 98.9 Severability

If any provision of this Part or the application thereof to any person or circumstance is adjudged invalid by a court of competent jurisdiction, such judgment shall not affect or impair the validity of the other provisions of this Part or the application thereof to other persons and circumstances.

I, GREGORY V. SERIO, Superintendent of Insurance of the State of New York, do hereby certify that the foregoing is the new Part 98 of Title 11 (Regulation 147), promulgated by me on, March 27, 2003, pursuant to the authority granted by Sections 201, 301, 1304, 1308, 4217, 4218, 4240 and 4517, of the Insurance Law, to take effect upon publication in the State Register.

Pursuant to the provisions of the State Administrative Procedure, prior notice of the proposed amendment was published in the State Register on February 5, 2003. No other publication or prior notice is required by statute.

Gregory V. Serio
Superintendent of Insurance

Dated: March 27, 2003

Insurance Regulation of Colorado state U.S.

New Regulation 3-1-15

**Premium Deficiency Reserve Standards for Individual and
Group Health Benefit Plans**

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Section 1. Authority

This regulation is promulgated pursuant to the authority of Sections 10-1-108, 10-1-109, 10-3-109, 10-3-208, 10-16-109, and 10-16-220, Colorado Revised Statutes, (C.R.S.)

Section 2. Basis and Purpose

The purpose of this regulation is to establish minimum standards for determining when a Premium Deficiency Reserve is necessary, for companies providing individual and group health coverage, and to implement rules for calculating the reserve.

Section 3. Applicability and Scope

This regulation applies to all licensed companies conducting business in the State of Colorado, as defined in Section 4, who issue any line of health coverage including, but not limited to, major medical, long-term care, and disability insurance. Each company is required to establish a Premium Deficiency Reserve, when necessary, on each financial statement submitted to the Colorado Division of Insurance. The Premium Deficiency Reserve is in addition to claim and contract reserves, rate stabilization reserves, retroactive premium liabilities, provider reserves,

provider withhold or bonus pool reserves, and other reserves not held to specifically make future benefit payments. A reserve similar to the Premium Deficiency Reserve may also be necessary for other types of contractual arrangements, such as administrative services agreements, or any other health benefit contracts in which the administrative fees or compensation received are not sufficient to cover the expenses for the remainder of the deficiency period. This reserve should be calculated using the procedures outlined in this regulation.

Section 4. Definitions

A. "Claims" means, for purposes of this regulation, all amounts payable for losses incurred under the health benefit contract.

B. "Company" means, for purposes of this regulation, a carrier as defined in Section 10-16-102(8), C.R.S., and includes, but is not limited to, licensed property and casualty insurance companies; licensed life and health insurance companies; non-profit hospital, medical-surgical, and health service corporations; health maintenance organizations; prepaid dental companies; and limited service licensed provider networks.

C. "Contract Grouping" means, for purposes of this regulation, a collection of health benefit contracts with similar benefits, such as comprehensive major medical plans, Medicaid, or small group health benefit plans. Each grouping should be determined in a manner consistent with how policies are marketed, serviced and measured. Generally the groupings should reflect how the premium rates are developed and applied.

D. "Contract Period" means, for purposes of this regulation, the period of time for which the company is liable for the provision of benefits as provided in the health benefit contract. This period may include multi-year arrangements.

E. "Deficiency Period" means, for purposes of this regulation, the period of time for which future earned premiums and current reserves are not sufficient to cover future incurred claim payments and expenses. This period may be for the remainder of the contract period and may include future contract periods.

F. "Expenses" means, for the purpose of this regulation, a reasonable allocation, by contract grouping, of the company's expenses (including claims adjustment expenses) reasonably assumed to be incurred in the settlement of the claims to be paid in the deficiency period. Fixed expenses need not be allocated to each contract grouping. These expenses may be allocated as determined by the Company and the calculation of the premium deficiency reserve may be performed using the direct costs only. Expenses for functions performed under a management agreement may not be waived and must be considered as part of the company's fixed expenses.

G. "Investment Income" means, for purposes of this regulation, any income, dividends, or other earnings that can appropriately be attributable to the contract grouping and the time period for which the calculation is being performed. This income normally can be attributed to earnings from earned premium reserves, reserves for known losses, and reserves for incurred but not reported losses.

H. "Premium" means, for the purpose of this regulation, the amount of compensation received to pay future claims payments and expenses potentially payable during the deficiency period.

I. "Premium Deficiency Reserve" means, for the purpose of this regulation, a reserve established on the valuation date when, it is probable that, future premiums and current reserves are not sufficient to pay future claim payments and expenses for the remainder of the deficiency period. This reserve should be reviewed at least annually and adjusted as necessary. The procedure for calculating this reserve can be found in Section 5 below.

J. "Valuation Date" means, for the purpose of this regulation, the beginning of the time period over which the Premium Deficiency Reserve is calculated.

Section 5. Calculation

The Premium Deficiency Reserve must be calculated, according to the following methodology and, if greater than zero, disclosed as a liability on each financial statement filed with the Colorado Division of Insurance, with a corresponding charge to operations. The reserve must be calculated, for each contract grouping, as the sum of the:

- ◆ Present value of future paid claims through the end of the deficiency period;
- ◆ Present value of future expenses;
- ◆ Present value of the claim and contract reserves at the end of the deficiency period.

Less:

- ◆ The claim reserves as of the valuation date, including special large claim reserves;
- ◆ The contract reserves as of the valuation date;
- ◆ The present value of the future earned premiums and appropriate investment income for the deficiency period; and
- ◆ Any current balance sheet accruals for future expenses.

Section 6. Restrictions and Other Guidelines

- A. Accuracy Review - Determinations of the reserve may be done monthly, quarterly, annually, or any time the actuary determines is reasonable, or is necessary for statutory reporting purposes, but no less frequently than annually. As of the date of each successive statutory financial statement, the Premium Deficiency Reserve must be re-evaluated and adjusted to reflect the losses that have been realized since the previous financial statement, and any deficiencies that have arisen.
- B. Actuarial Opinions - The Premium Deficiency Reserve amount is expected to be included in each Statement of Actuarial Opinion submitted to the Colorado Division of Insurance.
- C. Assumptions - All underlying assumptions should be specified and supported by as much company data as possible and other supporting data deemed necessary. These include, but are not limited to, the following assumptions; lapse, interest rate, claim and expense trend, premium increases and enrollment changes.
- D. Contract Grouping - Each contract grouping should be large enough to be material relative to the size of the company as a whole. In some cases, considerations of similarity and materiality may result in all health contracts being treated as a single grouping. Each contract grouping should be reviewed to determine if earned premiums and reserves will be sufficient to cover incurred claims and related expenses for each contract period. Each contract grouping should remain relatively consistent from valuation to valuation. A Premium Deficiency Reserve must be recognized for each contract grouping where a premium deficiency is indicated.
- E. Enrollment - The Premium Deficiency Reserve must be calculated using reasonable and supportable enrollment assumptions. Enrollment assumptions should be tied to any anticipated rate increases during the deficiency period. The effect of new business must be considered in the enrollment assumptions.
- F. Interest Rate - The interest rate used in determining the present values should be reasonable and supportable based upon the type of business and the deficiency period. Guidance may be found in Colorado Insurance Regulation 3-1-9.
- G. Investment Income - The calculation may reflect investment income that is appropriately attributable to the contract grouping and the time period for which the calculation is being performed. Investment income should be reflected as a cash inflow in the calculation.

H. Profit Recognition – Under no circumstances may anticipated future profits from contracts in one contract grouping from future renewal periods be used to reduce or mitigate the calculated Premium Deficiency Reserve for prior periods for contracts in a different contract grouping. Within a contract grouping, if rate increases are on file with the Division of Insurance that increase rates for the new contract period, and these increases will be adequate to cover claims and expenses in the new contract period, the anticipated profits may be used to reduce or mitigate the calculated Premium Deficiency Reserve for prior contract periods. Considerable actuarial judgment, including consideration of all pertinent factors, should be incorporated to determine if it is highly probable that these future profits will offset the calculated deficiencies in the valuation period.

Section 7. Documentation

The company must maintain adequate documentation as to how the Premium Deficiency Reserve was determined or why a Premium Deficiency Reserve was not necessary. The documentation should be maintained in a report or workpaper containing, at a minimum, the following information:

- A. The characteristics of the policies in each contract grouping.
- B. A listing of all of the assumptions underlying the calculation of the Premium Deficiency Reserve. Support for the determination of the assumptions should also be maintained. The listing should include, but not be limited to:
 - 1. Enrollment changes at renewal.
 - 2. Enrollment for any new business.
 - 3. Claim trends (including aging and durational changes as well as inflation and utilization trends)
 - 4. Future premium and expense assumptions.
 - 5. Valuation interest rate.
- C. Documentation as to how the Premium Deficiency Reserve was calculated.

All documentation should be made available, upon request, from the Colorado Division of Insurance within 30 days of the date of the request, or within 30 days of the filing date of the financial statements to which the request is directed.

Section 8. Enforcement

Noncompliance with this regulation may result, after notice and opportunity for hearing, in the imposition of any of the sanctions made available in the Colorado statutes pertaining to the business of insurance or other laws which include the imposition of fines and/or suspension or revocation of license.

Section 9. Severability

If any provision of this regulation or the application of it to any person or circumstance is for any reason held to be invalid, the remainder of the regulation shall not be affected.

Section 10. Effective Date

This regulation is effective on March 2, 2002.

Section 11. History

New regulation, effective March 2, 2002.

Insurance Regulation of Kentucky state U.S.

304.6-180 Deficiency reserve -- Recognition of premium deficiency reserve.

- (1) If in any contract year the gross premium charged by any life insurer on any policy or contract, which is subject to subsection (2) of KRS 304.6-140, is less than the valuation net premium for the policy or contract calculated by the method used in calculating the reserve thereon, but using the minimum valuation standards of mortality and rate of interest, the minimum reserve required for such policy or contract shall be the greater of either the reserve calculated according to the mortality table, rate of interest, and method actually used for such policy or contract, or the reserve calculated by the method actually used for such policy or contract but using the minimum standards of mortality and rate of interest and replacing the valuation net premium by the actual gross premium in each contract year for which the valuation net premium exceeds the actual gross premium. The minimum valuation standards of mortality and rate of interest referred to in this section are those standards stated in KRS 304.6-140 and 304.6-145. Provided that for any life insurance policy issued on or after January 1, 1986, for which the gross premium in the first policy year exceeds that of the second year and for which no comparable additional benefit is provided in the first year for such excess and which provides an endowment benefit or a cash surrender value or a combination thereof in an amount greater than such excess premium, the foregoing provisions of this section shall be applied as if the method actually used in calculating the reserve for such policy were the method described in KRS 304.6-150, ignoring the second subsection of that section. The minimum reserve at each policy anniversary of such a policy shall be the greater of the minimum reserve calculated in accordance with KRS 304.6-150, including the second subsection of that section, and the minimum reserve calculated in accordance with this section.
- (2) When the anticipated losses, loss adjustment expenses, commissions and acquisition costs, and maintenance costs exceed the recorded unearned premium reserve and any future installment premiums on existing policies, a premium deficiency reserve shall be recognized by a property and casualty insurer by recording an additional liability for the deficiency, with a corresponding charge to operations. Commission and other acquisition costs need not be considered in the premium deficiency analysis to the extent they have previously been expensed. For purposes of determining if a premium deficiency exists, insurance contracts shall be grouped in a manner consistent with how policies are marketed, serviced, and measured. A liability shall be recognized for each grouping where a premium deficiency is indicated. Deficiencies shall not be offset by anticipated profits in other policy groupings. If a premium deficiency reserve is established, disclosure of the amount of that reserve shall be made in the financial statements. If a reporting entity utilizes anticipated investment income as a factor in the premium deficiency calculation, disclosure of this shall be made in the financial statements.
- (3) When the anticipated losses, loss adjustment expenses, commissions and other acquisition costs, and maintenance costs exceed the recorded unearned premium reserve, contingency reserve, and the estimated future renewal premium on existing policies, a mortgage guaranty insurer shall recognize a premium deficiency reserve

by recording an additional liability for the deficiency with a corresponding charge to operations. Commissions and other acquisition costs need not be considered in the premium deficiency analysis to the extent they have been expensed. If a mortgage guaranty insurer utilizes anticipated investment income as a factor in the premium deficiency calculation, disclosure of this shall be made in the financial statements.

- (4) When the expected claims payments or incurred costs, claim adjustment expenses, and administration costs exceed the premiums to be collected for the remainder of a contract period, an individual or group accident and health insurer or health maintenance organization shall recognize a premium deficiency reserve by recording an additional liability for the deficiency, with a corresponding charge to operations. For purposes of determining if a premium deficiency exists, contracts shall be grouped in a manner consistent with how policies are marketed, serviced, and measured. A liability shall be recognized for each grouping where a premium deficiency is indicated. Deficiencies shall not be offset by anticipated profits in other policy groupings. Such accruals shall be made for any loss contracts, even if the contract period has not yet started.

Effective: July 13, 2004

History: Amended 2004 Ky. Acts ch. 24, sec. 17, effective July 13, 2004. -- Amended 1982 Ky. Acts ch. 263, sec. 13, effective July 15, 1982. -- Amended 1978 Ky. Acts ch. 280, sec. 7, effective June 17, 1978. -- Created 1970 Ky. Acts ch. 301, subtit. 6, sec. 18, effective June 18, 1970.

新加坡保費不足相關法令

Insurance Regulations

(Chapter 142, Section 64)

Revised Edition 2002

Part V:
Determination of Liabilities

Determination of liabilities

20. -(1) Subject to this Part, the amount of liabilities of an insurer shall be determined in accordance with generally accepted accounting concepts, bases and policies or other generally accepted methods appropriate for insurers.

(2) In determining the amount of liabilities under paragraph (1), all contingent and prospective liabilities shall be taken into account but not liabilities in respect of share capital.

(2A) In respect of the general business of an insurer, the amount of insurance policy liabilities shall not be less than the amount of premium liabilities and claims liabilities as valued by the actuary under section 37 (1) (b) of the Act.

S 16/2002, wef 08/01/2002

(3) The amount of unearned premium reserves in respect of general business shall be -

S 16/2002, wef 08/01/2002

(a) subject to sub-paragraphs (b), (c) and (d), an amount calculated on a basis not less accurate than the 1/24th method;

S 16/2002, wef 08/01/2002

(b) in the case of direct insurance business relating to cargo policies, at the election of the insurer, an amount not less than 25% of the premiums for those policies or an amount calculated on a basis not less accurate than the 1/24th method;

S 16/2002, wef 08/01/2002

(c) in the case of reinsurance business, at the election of the insurer, an amount not less than 25% of the premiums in the case of marine and aviation policies or 40% of the premiums in other cases or an amount calculated on a basis not less accurate than the 1/24th method; and

S 16/2002, wef 08/01/2002

(d) calculated -

(i) where the 1/24th method or some other more accurate method is used, on premiums reduced by the actual commissions payable; or

(ii) in any other case, on premiums without any deduction of commissions payable therefrom.

S 16/2002, wef 08/01/2002

(4) For the purposes of paragraph (3) -

"marine and aviation policy" means a policy of insurance -

(a) upon goods, merchandise or property of any description transported on board vessels, aircraft or other means of conveyance including incidental transit before and after shipment;

(b) upon the freight of, or any other interest in or relating to vessels, aircraft or other means of conveyance;

(c) upon vessels or aircraft, or upon machinery, tackle furniture or equipment of vessels or aircraft;

(d) against damage arising out of or in connection with the use of vessel or aircraft, including third-party risks; or

(e) against risks incidental to the construction, repair or docking of vessels, including third-party risks;

"premiums" means the net amount of the premiums receivable in the accounting period after deduction of return premiums and payments in respect of reinsurances or retrocessions, except that no deduction shall be made in respect of reinsurances other than reinsurances with a registered insurer or insurer authorised under the Act and reinsurances of special risks, unless the deduction is made against a reinsurer's deposit equivalent to the reserve calculated in accordance with paragraph (3).

(5) In the valuation of the life policies of an insurer, no deduction shall be made for reinsurances other than reinsurances with a registered insurer, except against reinsurer's deposits, and a deduction against a reinsurer's deposit shall be limited so that the value of the liabilities deducted does not exceed the amount of the deposit.

(6) For the purposes of this regulation -

(a) a deduction may be made against a reinsurer's deposit only where the following conditions are satisfied:

(i) the deposit is held by the insurer as security for the whole of the reinsurer's liabilities under the reinsurances to which it relates;

(ii) the reinsurer may not withdraw the deposit while any such liabilities is secured thereon, nor

reduce it otherwise than in the event of and in proportion to a reduction in those liabilities; and

(iii) the deposit relates only to the insurer's life business and the deduction is of liabilities secured thereon or, as the case may be, the deposit relates only to the insurer's general business and the deduction is of premiums paid in respect of liabilities which are or were secured thereon;

(b) any arrangement made by an insurer whereby the insurer treats liabilities of a branch in Singapore in respect of any policy as liabilities in whole or in part of a branch outside Singapore shall be regarded as a reinsurance of those liabilities as if the branches were separate insurers and the arrangement were a contract between them, and no reinsurer's deposit retained by the branch in Singapore under any such arrangement shall be released by that branch except in accordance with the arrangement and for the purpose of this paragraph, an insurer's head office is to be treated as included in the expression "branch"; and

(c) reinsurances of special risks shall comprise only -

(i) reinsurances of liabilities under a marine and aviation policy, being liabilities which consist of or include those arising from the insurance of a marine hull or aircraft hull; and

(ii) reinsurances of any other risk which by reason of its exceptional nature and amount the Authority permits to be treated as a special risk,

and notwithstanding that the reinsurer's liabilities in respect of such reinsurance are or were secured in whole or in part by a reinsurer's deposit, no deduction made with reference to the reinsurance shall be treated as a deduction against the deposit.

(7) The determination of the amount of liabilities in respect of life policies of an insurer (other than liabilities which have fallen due for payment before the valuation date) shall be made on actuarial principles and shall make proper provision for all liabilities on prudent assumptions in regard to the relevant factors.

(8) In any case the amount mentioned in paragraph (7) shall not in the aggregate be less than the amount calculated on the minimum basis; and in the case of the life business of the insurer in a country outside Singapore the amount shall not be less than is required by the law of the country.

(9) Paragraph (2A) shall not affect any statements of account which an insurer is required to lodge with the Authority in respect of any accounting period before the year 2002.

S 16/2002, wef 08/01/2002

(10) In this regulation and regulation 20A -

"claims liabilities" means the obligation, whether contractual or otherwise, to make future payments in relation to all claims that have been incurred as at balance-sheet date and includes reserves for claims reported, claims incurred but not reported, claims incurred but not enough reported and direct and indirect claims expenses;

"premium deficiency reserves" means the reserves for the expected loss on unexpired policies after taking into consideration all benefits, claims, claims adjustment expenses, acquisition cost, maintenance costs, and policyholders' experience participation, and shall be calculated net of reinsurance;

"premium liabilities" means the reserves for unexpired risks and includes liabilities for all benefits, claims and expenses, acquisition costs, maintenance costs and policyholders' experience participation to be incurred

after the end of the particular accounting period on which the actuarial investigation is conducted;

"reserves for unexpired risks" shall be the sum of unearned premium reserves and premium deficiency reserves.

S 16/2002, wef 08/01/2002

Valuation of liabilities of general business

20A. -(1) In determining the amount of insurance policy liabilities in respect of the general business of an insurer under section 37 (1) (b) of the Act, the actuary shall calculate -

(a) for each line of business -

(i) a best estimate of the value of premium liabilities; and

(ii) a best estimate of the value of claims liabilities; and

(b) for each insurance fund established under the Act, an estimate of the provision for adverse deviations that relates to the inherent uncertainty in each of the best estimate values, calculated based on 75 per cent level of sufficiency.

(2) For the purposes of paragraph (1) (a), the value of premium liabilities and claims liabilities shall be estimated for each line of business set out in Form 7 of the First Schedule to the Insurance (Accounts and Statements) Regulations (Rg 2).

(3) For the purposes of paragraph (1), the insurance policy liabilities shall, subject to paragraph (4), be determined by the actuary either -

(a) on a gross basis, in which case a separate estimate of the reinsurance recoveries shall also be determined; or

(b) on a net of reinsurance recoveries basis.

(4) Notwithstanding anything in paragraph (3), if there have been significant changes in the reinsurance arrangements, or if the outstanding reinsurance recoveries have a material impact on the actuary's estimate of the value of the liabilities, the insurance policy liabilities shall be determined on both gross and net of reinsurance recoveries bases.

(5) Without prejudice to any other factor that the actuary may consider necessary, the actuary shall, in determining insurance policy liabilities under paragraph (1), take into account the following:

(a) the probability of recovery of outstanding reinsurance recoveries; and

(b) the presence of non-reinsurance recoveries such as salvage and subrogation.

(6) For the purposes of section 37 (1) (c) of the Act, the actuary shall include in the actuarial report, each of the values as are required to be estimated under this regulation.

S 16/2002, wef 08/01/2002

Determination of liabilities on establishment of offshore insurance fund of insurer

21. -(1) For the purpose of determining the minimum value of the assets to be allocated by an insurer to an insurance fund under section 17 (15) of the Act, the amount of the insurer's liability in respect of the policies registered or required to be registered in the insurer's register of offshore policies as at its establishment shall be determined in accordance with paragraphs (2) and (3).

S 466/2002, wef 01/10/2002

(2) In respect of policies belonging to the insurer's life business, prospective liabilities shall be valued as for a statutory valuation at the day preceding the date of the establishment of the register, and in the case of life policies on the minimum basis,

and in other cases on a basis approved by the Authority; and there shall be added to the amount of those liabilities any amounts due and unpaid under those policies.

(3) In respect of policies belonging to the insurer's general business, prospective liabilities shall be taken to be of an amount equal to the reserve for unexpired risks which would be required in respect of those policies in a revenue account lodged with the Authority under the Act for the accounting period ending on the day preceding the date of the establishment of the register; and there shall be added to the amount of those liabilities the amount estimated to be required to provide for claims arising before the end of that period, after allowing for recoveries from reinsurances and for salvage.

Withdrawal from insurance fund in respect of life policy removed from register of Singapore policies

22. -(1) Where a policy belonging to the insurer's life business is under section 16 (4) of the Act removed from the register of Singapore policies, the maximum amount that may be withdrawn from the insurance fund in respect of that policy shall be an amount equal to the insurer's liabilities in respect of the policy as at the date of the removal.

S 466/2002, wef 01/10/2002

(2) The said liabilities shall be valued on the basis adopted for the last statutory valuation relating to the insurer's life business (or, if there has been no such valuation, on the minimum basis in the case of a life policy and on a basis approved by the Authority in other cases) and shall be valued as for a statutory valuation.

Surrender values of life policies

23. -(1) On the surrender of a life policy under section 60 (1) of the Act, the surrender value of the life policy shall be -

S 466/2002, wef 01/10/2002

(a) in the case of an endowment policy, an amount equal to 80% of the insurer's liabilities in respect of that policy determined in accordance with paragraph (2); and

(b) in the case of a whole term of life policy, an amount equal to 95% of the insurer's liabilities in respect of that policy determined in accordance with paragraph (2),

at the date of the surrender.

(2) For the purposes of paragraph (1), an insurer's liabilities shall be determined by -

(a) for products introduced on or after 1st January 1994, the minimum valuation basis as in regulation 26 (5); and

(b) for products introduced before 1st January 1994, the same method as in the minimum basis, except that the valuation shall be made by using -

(i) the A1924-29 Ultimate Mortality Table for both male and female lives; and

(ii) a rate of interest of 4% per annum.

(3) Notwithstanding paragraph (1), the Authority may allow, in any particular case or in relation to any particular type of life policies, the surrender values of such policies to be calculated on a basis different from that specified in paragraph (1).

Amount of paid-up policy to be obtained in exchange for life policy

24. --(1) On the exchange of a life policy under section 60 (3) of the Act for a paid-up policy, the paid-up policy shall be for the amount determined, as at the date of exchange, by the following formula:

$$\frac{A}{B}$$

Where

A is the surrender value in dollars of the policy exchanged, less any sums due under the policy to the insurer; and

B is the value of an insurer's liabilities in respect of a paid-up policy for one dollar payable on the like contingencies as the policy moneys under the policy exchanged.

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(2) The surrender value referred to in the formula in paragraph (1) shall be calculated in the manner specified under regulation 23 for surrenders under section 60 (1) of the Act, and the liabilities referred to in that formula shall be valued on the basis as prescribed in regulation 23 (2).

S 466/2002, wef 01/10/2002

Determination of liabilities in connection with winding up

25. -(1) In proceedings under any written law relating to companies for a winding up by the court of an insurer to which this regulation applies, the contingent and prospective liabilities of the insurer in respect of policies shall, in determining whether the insurer is unable to pay its debts, be estimated as follows:

(a) liabilities in respect of policies belonging to the insurer's life business shall in the case of life policies be valued on the minimum basis, and in other cases on the basis adopted for the last statutory valuation relating to that business; and

(b) subject to paragraph (7), liabilities in respect of policies belonging to the insurer's general business shall be taken to be of an amount equal to the reserves for unexpired risks on those policies calculated in the manner prescribed under regulation 20 (3).

(2) Where, in any winding up of such an insurer, any liabilities of the insurer in respect of Singapore policies or offshore policies are required to be valued, the liabilities shall be estimated as follows:

(a) liabilities in respect of policies belonging to the insurer's life business shall be valued on the basis adopted by the insurer on the last statutory valuation or, if there has been no such valuation, on the minimum basis; and

(b) liabilities in respect of any policy belonging to the insurer's general business shall be taken to be of an amount equal to the reserves for unexpired risks on that policy calculated in the manner prescribed under regulation 20 (3).

(3) As regards life policies, paragraph (2) shall have effect subject to the following provisions:

(a) the addition (if any) to the liabilities in respect of any policy which is attributable to the adoption of a basis other than the minimum basis shall not rank for the purpose of proof against the assets of the life fund, except after payment in full of the liabilities and expenses to which the fund is applicable according to a valuation made on the minimum basis; and

(b) if there is an available surplus in the life fund, the liabilities in respect of participating policies shall, subject to paragraph (4), be increased so as to allocate to those policies such part of the surplus as is proportionate to the bonuses of the 10 years preceding the commencement of the winding up.

(4) For the purposes of paragraph (3) (b), the part of the surplus proportionate to the bonuses of the said 10 years is the proportion which the amounts allocated out of surpluses in those 10 years by way of bonus to participating policies bear to the total of the amounts so allocated and of the amounts

withdrawn from the fund in those years out of surpluses; but if it appears to the court that by reason of special circumstances an increase which would otherwise be made under paragraph (3) (b) in the liabilities in respect of any policy would be inequitable, the court may order that there shall be no increase or a lesser increase.

(5) For the purposes of paragraph (3), "life fund" means an insurance fund maintained under the Act in respect of the insurer's life business, including assets comprised in the deposit so maintained which do not form part of the fund except in a winding up and after allocation of such assets to the fund by the Authority under section 17 (13) of the Act.

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(6) For the purposes of paragraph (3) (b), there is an available surplus in the life fund if, but only if, after taking account of sums recovered from reinsurers, the fund is more than sufficient without recourse to the said assets to meet the liabilities and expenses to which it is applicable.

(7) Where an insurer's liabilities in respect of policies belonging to the insurer's general business include the making of periodical payments in respect of an event occurring before the date as at which the liabilities are to be estimated under paragraph (1) or (2), then to the amount so determined there shall be added in respect of those payments such amount as would be taken to be their value for purposes of proof in winding up to which this regulation does not apply.

(8) This regulation shall apply to any registered insurer and to any Singapore insurer which has ceased to be so registered but remains under any liability in respect of Singapore policies or offshore policies.

Determination of liabilities of life policies on minimum basis

26. -(1) Where by these Regulations the liabilities of an insurer in respect of a life policy are required to be determined on the

minimum basis, that shall be taken as requiring a determination in accordance with this regulation.

(2) The liability in respect of a policy shall be taken as equal to the amount (if any) by which the value as at the valuation date of the reversion in the policy moneys, according to the contingencies on which they are payable, exceeds the adjusted value as at the valuation date of the premiums (if any) payable after that date, according to the contingencies upon which they are respectively payable.

(3) For the purposes of paragraph (2), the adjusted value of the premiums payable after the valuation date is their actual value adjusted -

(a) by assuming that the policy provides only for such premiums as are sufficient to provide for the risk incurred by the insurer in issuing it, without provision for bonuses, office expenses or other charges; and

(b) where the premiums are payable for a whole life insurance, endowment insurance or deferred annuity (with or without other benefits) by making whichever of the further adjustments stated in paragraph (4) will produce the lower adjusted value.

(4) The further adjustments mentioned in paragraph (3) (b) are -

(a) to assume that the policy is issued one year after the actual date of its issue (but without thereby postponing the time when the premiums cease or any policy moneys become payable if that time is fixed by reference to the date of issue) and to calculate the premiums referred to in paragraph (3) (a) accordingly; and

(b) to make to the premiums referred to in paragraph (3) (a) such addition as would have at the date of issue of the policy a capitalised value equal to 3% of the policy

moneys (taking any annuity at the capitalised value it would have on becoming payable).

(5) In respect of a policy other than an annuity, the valuation shall be made by using -

(a) the 1992 Commissioner's Valuation Table for male lives and the 1992 Commissioner's Valuation Table with a three-year age setback for female lives; and

(b) a rate of interest of 4% per annum.

(6) In respect of an annuity, the valuation shall be made by using -

(a) the a(90) Ultimate Table rated down 2 years; and

(b) a rate of interest of 5% per annum.

(7) Where the liabilities in respect of more than one policy are to be valued on the minimum basis, and it is necessary to have regard to the ages of persons on whose lives the policies were issued or to any periods of time connected with the policies, it shall not be necessary to take exact ages and periods so long as the result produced by not doing so is reasonably approximate to that which would be produced by doing so.

(8) The basis adopted for a statutory valuation shall be deemed to be not less stringent than the minimum basis if the rate of interest used is not greater than the rates specified in paragraph (5) or (6), as applicable, and the mortality table used (if not that specified in paragraph (5) or (6)) is approved by the Authority as being, with the rate of interest which is to be used, likely to result in the liabilities being given a value not less in the aggregate than if valued on the minimum basis.

(9) Notwithstanding paragraphs (5), (6) and (8), the Authority may allow any insurer to adopt such other basis of statutory valuation approved by the Authority in respect of such description of life policy as specified by the Authority; and for

the purposes of these Regulations, such approved basis of valuation shall be deemed to be a valuation on the minimum basis.

References to statutory valuation of life policies

27. -(1) Any reference in these Regulations to a statutory valuation of an insurer's liabilities shall be read as a reference to a valuation made for the purposes of section 37 of the Act.

S 466/2002, wef 01/10/2002

(2) Where by these Regulations the liabilities of an insurer in respect of a Singapore policy or offshore policy belonging to the insurer's life business are required to be valued on a specified basis as for a statutory valuation, the liabilities shall be valued on that basis with the like deduction (if any) for any reinsurance of those liabilities as would be made on a statutory valuation.

(3) For the purpose of paragraph (2), the total deduction that may be made against a reinsurer's deposit in respect of the reinsurances secured thereby shall (if the case requires) be apportioned rateably between those reinsurances according to the value of the liabilities reinsured.

中國大陸保費不足相關法令

保险公司非寿险业务准备金管理办法（试行）

2005-12-21

保监会令（2004）13号 2004年12月15日

第一章 总则

第一条 为了加强对保险公司非寿险业务准备金的监督管理，保证保险公司稳健经营和偿付能力充足，保护被保险人利益，根据《中华人民共和国保险法》，制定本办法。

第二条 本办法所称非寿险业务，是指除人寿保险业务以外的保险业务，包括财产损失保险、责任保险、信用保险、短期健康保险和意外伤害保险业务以及上述业务的再保险业务。

第三条 本办法所称保险公司，是指在中华人民共和国境内依法设立的财产保险公司和再保险公司，包括中资保险公司、中外合资保险公司、外资独资保险公司以及外国保险公司分公司。

第四条 经营本办法所称非寿险业务的保险公司，应当按照中国保监会的规定，遵循非寿险精算的原理、方法和谨慎性原则，评估各项准

备金，并根据评估结果，准确提取和结转。

第二章 准备金种类

第五条 保险公司非寿险业务准备金包括未到期责任准备金、未决赔款准备金和中国保监会规定的其它责任准备金。

第六条 未到期责任准备金是指在准备金评估日为尚未终止的保险责任而提取的准备金，包括保险公司为保险期间在一年以内（含一年）的保险合同项下尚未到期的保险责任而提取的准备金，以及为保险期间在一年以上（不含一年）的保险合同项下尚未到期的保险责任而提取的长期责任准备金。

第七条 未决赔款准备金是指保险公司为尚未结案的赔案而提取的准备金，包括已发生已报案未决赔款准备金、已发生未报案未决赔款准备金和理赔费用准备金。

第八条 已发生已报案未决赔款准备金是指为保险事故已经发生并已向保险公司提出索赔，保险公司尚未结案的赔案而提取的准备金。

第九条 已发生未报案未决赔款准备金是指为保险事故已经发生，但尚未向保险公司提出索赔的赔案而提取的准备金。

第十条 理赔费用准备金是指为尚未结案的赔案可能发生的费用而提取的准备金。其中为直接发生于具体赔案的专家费、律师费、损失检验费等而提取的为直接理赔费用准备金；为非直接发生于具体赔案的费用而提取的为间接理赔费用准备金。

第三章 准备金提取方法

第十一条 未到期责任准备金的提取，应当采用下列方法之一：

（一）二十四分之一法（以月为基础计提）；

（二）三百六十五分之一法（以天为基础计提）；

（三）对于某些特殊险种，根据其风险分布状况可以采用其他更为谨慎、合理的方法。

未到期责任准备金的提取方法一经确定，不得随意更改。

第十二条 保险公司在提取未到期责任准备金时，应当对其充足性进行测试。未到期责任准备金不足时，要提取保费不足准备金。

第十三条 对已发生已报案未决赔款准备金，应当采用逐案估计法、案均赔款法以及中国保监会认可的其它方法谨慎提取。

第十四条 对已发生未报案未决赔款准备金，应当根据险种的风险性质、分布、经验数据等因素采用至少下列两种方法进行谨慎评估提取：

- (一) 链梯法；
- (二) 案均赔款法；
- (三) 准备金进展法；
- (四) B-F 法及其它合适的方法。

第十五条 对直接理赔费用准备金，应当采取逐案预估法提取；对间接理赔费用准备金，采用比较合理的比率分摊法提取。

第十六条 对含投资或储蓄成分的保险产品，其风险保障部分按照上述方法提取未到期责任准备金和未决赔款准备金。

第十七条 保险公司提取的各项准备金不得贴现。

第四章 准备金的报告

第十八条 保险公司应当建立精算制度，指定精算责任人负责准备金的提取工作。

第十九条 保险公司应当定期向中国保监会报送由公司精算责任人

签署的准备金评估报告。报告应当包括以下内容：

- (一) 报告的目的；
- (二) 声明报告所采用的方法符合保险监管部门的规定；
- (三) 对准备金提取的精算评估意见；
- (四) 对准备金评估的详细说明；
- (五) 对报告中特定术语及容易引起歧义概念的明确解释。

第二十条 对准备金评估的说明应当包括以下内容：

- (一) 险种或类别的明确划分标准和名称；
- (二) 险种或类别数据的完备性、准确性，并说明数据中存在的问题；
- (三) 评估的精算方法和模型，如精算方法和模型与过去采用的方法和模型不一致，要说明改变的原因和对准备金结果的影响；
- (四) 精算方法和模型所采用的重要假设及原因；
- (五) 上一次准备金提取的精算结果与实际情况之间的差异；

(六) 准备金提取的充足性情况 ;

(七) 对未到期责任准备金的提取 , 应当说明险种的周期性、保险费基准费率、风险调整系数、赔付率、费用率和退保率等因素的变化情况 ;

(八) 未决赔款准备金的提取 , 应当说明赔款案件数发生规律、结案规律、案均赔款变化规律、承保实务、理赔实务、分保安排和额外成本增加等因素的变化情况。

第二十一条 保险公司应当按照业务险种或类别提取准备金 , 并分别按再保前、再保后报告准备金提取结果。

第二十二条 保险公司应当按照中国保监会规定的时间报送准备金评估报告。

第二十三条 本办法自 2005 年 1 月 15 日起施行。

AICPA 有關保費不足準備金文章

PREMIUM DEFICIENCY RESERVES

The premium deficiency reserve is a subject which has not received due attention in the literature of the Casualty Actuarial Society. This reserve is required of certain insurance companies reporting on a basis consistent with Generally Accepted Accounting Principles (GAAP). Specifically, the purpose of the premium deficiency reserve is to reflect a "probable loss" associated with unexpired portions of insurance policies in force as of the financial statement date. Current technology for the computation has been developed by the American Institute of Certified Public Accountants (AICPA) and is summarized in *Computation of Premium Deficiencies in Insurance Enterprises*¹ (the Issues Paper). While AICPA issues papers do not establish enforceable standards of financial accounting, they do include advisory conclusions which represent the majority opinion of the AICPA Accounting Standards Executive Committee. The purpose of this paper is to acquaint the actuary with the technology developed in the Issues Paper and to refine and improve upon that technology.

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1. PREMIUM DEFICIENCY RESERVES: A BRIEF HISTORY

This account of the development of the premium deficiency reserve begins with the issuance, by the Financial Accounting Standards Board (FASB), of Statement of Financial Accounting Standards No. 5, **Accounting for Contingencies**² (FAS 5) in March of 1975. FAS 5 requires an accrual for contingent losses under certain circumstances. Consider the definition set forth in FAS 5:

1.1 Accrual of Loss Contingencies

An estimated loss from a loss contingency shall be accrued as a charge to income if both of the following conditions are met:

- a) Information available prior to the issuance of the financial statements indicates that an asset had been impaired or a liability had been incurred at the date of the financial statements. It is implicit in this condition that it must be probable that one or more future events will occur confirming the fact of the loss.
- b) The amount of loss can be reasonably estimated.

This general statement, when applied to property and casualty insurance companies, lead some to believe that there are circumstances in which it is probable that an insurance company will incur losses and other expenses in excess of premiums. In such circumstances, the assumption that the unearned premium liability, less the deferred acquisition cost asset, is a reasonable proxy for future claim payments does not hold. Concern for this issue was given expression in Statement of Position 78-6 on **Accounting for Property and Liability for Property and Liability Insurance Companies**³ (SOP 78-6), issued in July of 1978. SOP 78-6 reached the conclusion that a liability for premium deficiency should be established in those cases where claim payments and other policy costs are expected to exceed premiums to be earned. In June of 1982 the substance of SOP 78-6 was given its final AICPA expression in Statement of Financial Accounting Standards No. 60 **Accounting for and Reporting by Insurance Enterprises**⁴ (FAS 60). The definition of premium deficiency is given as follows:

1.2 Premium Deficiency

A probable loss exists if there is a premium deficiency relating to short duration [*Note: e.g. property and liability*] or long duration contracts. Insurance contracts shall be grouped consistent with the enterprise's manner of acquiring, servicing, and measuring the profitability of its insurance contracts to determine if a premium deficiency exists.

For financial statement presentation, it was determined that if a premium deficiency exists, the DAC asset is to be reduced by the amount of the deficiency. If the premium deficiency exceeds the DAC asset, then an additional liability in the amount of the excess is to be established.

1.3 Present Value Considerations Apply

The Issues Paper that followed in March of 1984 reached the conclusion that the time value of money should be given consideration in the computation of premium deficiency. In short, the advisory conclusions are as follows⁵: 1) The amount of investment income to be used should be "earnings expected to be generated from the investment of the net cash available from in-force premiums." 2) The interest rate to be used for discounting is the expected "ratio of interest income, dividends and rents, net of investment expenses, to the total invested assets." 3) "The total amount of expected investment income used in the determination of a premium deficiency should be reduced proportionately if the enterprise's total recorded amount of invested assets plus expected investment income is less than its total liabilities." Two methods for the calculation of investment income are described:

1.3.1 Investment Income

This is the approach recommended in the Issues Paper⁶. The investment income methodology examines the cash flows and compares the nominal value of the investment income with the nominal value of the deferred costs to arrive at an estimated premium deficiency. The methodology, as implemented in the Issues Paper, is faulty, as will be seen in the discussion below.

1.3.2 Present Value of Future Losses

The present value methodology discounts future loss and maintenance payments to the financial statement date, and compares the unearned premium liability with the sum of these discounted losses and the DAC asset to arrive at the estimated premium deficiency. As will be seen later, the investment income approach, when properly implemented, is equivalent to this approach.

2. ISSUES PAPER CALCULATION OF PREMIUM DEFICIENCY RESERVES

2.1 Measurement of Deferred Costs

The purpose of the premium deficiency is to recognize that a liability in excess of the unearned premium reserve has been incurred. To assess the amount of this excess liability it is necessary to estimate the deferred costs which it is intended to cover. Four major costs are explicitly defined by the Issues Paper⁷:

2.1.1 Acquisition Costs

Costs that vary with and are primarily related to acquisition of insurance contracts (for example, agent and broker commissions, certain underwriting expenses and policy issue costs, and medical and inspection fees).

2.1.2 Maintenance Costs

Costs associated with maintaining records relating to insurance contracts and with the processing of premium collections and commissions.

2.1.3 Expected Claim and Claim Adjustment Expenses

Claims expected to occur subsequent to a particular date (ordinarily, the balance sheet date) until the expiration of the policies in force (unexpired portion of the policies).

Claim adjustment expenses to be incurred in the course of settling expected claims.

2.1.4 Policyholder Dividends

[Policyholder dividends traditionally reflect a share in the profit of an insurer's business returned to its policyholders. For marketing reasons, dividends may be declared even in unprofitable situations, and thus may enter into the premium deficiency calculation.]

2.2 Estimation of the Premium Deficiency Reserve

The calculation of the premium deficiency reserve presented in the Issues Paper focuses upon the two alternative techniques for the recognition of the time value of money: (1) the computation of expected investment income, and (2) the computation of the present value of future claims and maintenance costs. It is argued in this section that, properly implemented, there is no difference between calculations (1) and (2). This contradicts the advisory conclusions set forth in the Issues Paper which describe a technically flawed calculation of expected investment income.

The Issues Paper also compares recognition of investment income for all policies in-force as of the annual statement date (Method A) with recognition of the time value of money only for unearned exposures and losses as of the annual statement date (Method B). The Issues Paper recommends that investment income for all policies in-force be considered in the premium deficiency test⁸. This paper does not argue that the Method A approach is either right or wrong, but only that, in essence, it allows the insurer, in the case of a premium deficiency, to discount loss and loss adjustment expense reserves associated with the expired portion of in-force policies, as well as future loss and loss adjustment expenses associated with the unexpired portion of in-force policies.

For the examples which follow, anticipated claims experience for a collection of policies is set forth in Exhibit I. Presumably, these policies comprise a portfolio of risks characterized principally by the manner in which they are "acquired and serviced" by the insurance company. (These examples are borrowed directly from Appendix I of the Issues Paper. The loss ratio is adjusted to 88% in order to deal with the case in which a premium deficiency may exist.)

2.2.1 Expected Investment Income

The recognition of the time value of money through a computation of expected investment income in the Issues Paper is exemplified in Exhibits II and III. Exhibit II details the calculation of expected investment income arising out of in-force premiums

and associated with future loss payments. The in-force premium is assumed to be collected at the mid-point of the 1981 and underwriting costs of 30.16% and first year claims are deducted immediately. In succeeding years, investment income is determined as 7% of the average balance of cash before and after payment of claims and maintenance costs. Maintenance costs are assumed to amount to 0.83% of premiums, and are paid in proportion to claim payments. (This method only approximates the effect of a mid-year claim payment assumption. Since that assumption is itself an approximation, the actual error is not material.)

The crux of the Issues Paper premium deficiency test is to compare the unearned premium liability with the sum of associated nominal loss, LAE and maintenance costs, as well as the deferred acquisition cost (DAC) asset. Any resulting deficiency is to be reduced by the nominal amount of investment income earned (or interest paid) over the period in which the claims are expected to be settled. Referring to Exhibit II, one sees that the cash flows associated with all in-force premiums are considered for the calculation of the total investment income to be utilized in the premium deficiency test. It is apparent that some of this investment income would be included in a calculation of the discount associated with loss reserves, since \$192,000 of the premium and \$168,960 of the losses are earned or incurred as of the statement date. Thus this premium deficiency calculation permits discounting of certain claim reserves when necessary to avoid recognition of the premium deficiency liability.

Exhibit III sets forth the expected investment income calculation of premium deficiency based solely upon cash flows associated with the unexpired portion of the in-force premium. In other respects it is similar to the Exhibit II calculation, the principal difference being that in the premium deficiency test, only maintenance costs associated with the unexpired in-force premiums are deducted from the established unearned premium liability. Exhibit III charges maintenance costs for all in-force premiums

against the unearned premium. This would appear to be a flaw in the Issues Paper calculation.

Whether all in-force cash flows, or only those associated with unexpired portions of the in-force policies, are considered, the Issues Paper investment income calculation is flawed. Consider the following situation: An alternative set of circumstances to those shown in Exhibit I is to be assessed for premium deficiency. The anticipated experience is identical to that shown in Exhibit I, with the exception that \$1 of additional loss is to be paid in the sixth year subsequent to the close of the accident year. (The experience of Exhibit I anticipates all claims settled in the fifth year subsequent to the close of the accident year.) Clearly the difference in the resultant premium deficiency due to this change should be negligible. Yet the Issues Paper premium deficiency calculation leads to an additional deficiency of either \$3,123 under Method A, or \$1,002 under Method B, due to the accrual of interest against the negative closing balances, \$41,619 for Method A and \$14,314 for Method B. For each additional period in which an arbitrarily small amount is expected to be paid in losses, the premium deficiency would increase by the amount of interest charged against the preceding negative balance. This scenario suggests a fundamental error in the Issues Paper calculation, which is that it does not properly account for the time value of money. Specifically, all cash flows are calculated in nominal dollars and compared as of the financial statement date with no adjustment for their timing. This is equivalent to assuming that a payment of \$1 today is equally valuable as \$1 to be paid one year from today, or that the time value of money is zero.

The time value of money is an economic question, and the following quote from Alfred Marshall's *Principles of Economics*⁹ addresses the issue:

The balance between efforts [e.g. *policy payments*] and the satisfactions [e.g. *premiums*] resulting from them may be made up to any day that is found convenient. But whatever day is chosen, one simple rule must be followed :-Every element whether an effort or a satisfaction, which dates from a time anterior to that day must have compound interest for the interval accumulated upon it: and every element, which dates from a time posterior to that day, must have compound interest for the interval discounted from it.

The Issues Paper considers cash flows from investment income, but fails to balance these and all other cash flows to a single day. The correct balance may be obtained directly from the present value calculation, or as will be shown below by adjusting the expected investment income approach to give proper recognition to the time value of money.

2.2.2 Present Value of Future Losses

Exhibits IV and V set forth the present value methodology for the determination of the premium deficiency reserve. Exhibit IV includes cash flows associated with in-force policies subsequent to the financial statement date, while Exhibit V includes only those cash flows associated with the unexpired portions of in-force policies.

Referring to Exhibit IV, one can readily see that inclusion of all in-force policy cash flows in essence recognizes a discount on incurred claim reserves. The claim and maintenance payments are identical to Exhibit II, and are discounted to 12/31/81 using the standard mid-year payment assumption. The difference between the nominal value of these payments, \$259,654, and their discounted value, \$229,551, is the discount associated both with claims yet to be incurred on unexpired portions of in-force policies and with claims which have been incurred on the expired portions of in-force policies. These latter claims are already reported as an outstanding liability in the balance sheet of the insurance company.

In the premium deficiency test, when the nominal value of the unpaid claims incurred prior to the financial statement date is deducted from the present value of all claims,

whether expired or not, the resultant "present value of future payments" to be included in the premium deficiency test is equivalent to the present value of future payments associated with unexpired portions of in-force cash flows, less the discount on incurred claims associated with in-force policies. Thus the methodology would be equivalent to an accounting rule which stated that, if a premium deficiency is indicated on the unexpired portion of in-force policies, that deficiency should be reduced by the amount of discount associated with incurred claims on the expired portion of in-force policies before it is recognized in the insurance company's financial statements.

2.2.3 Reconciliation of Methodologies

To begin consider the results of the four premium deficiency tests over a range of loss and loss adjustment expense ratios, which are tabulated in Exhibit VI. Note that the present value Method B calculation always yields a greater premium deficiency indication than the present value Method A indication. This is expected since the A calculation, as discussed above, allows the insurer to utilize discount on the expired portion of the in-force policy loss and loss adjustment expense reserves to offset the inadequacy of the premium for the unexpired portion of the in-force policies. In the case of the expected investment income calculation, this consistent relationship between the A and the B calculations is lost: near the margin between premium deficiency and premium adequacy, the indications shift, with Method A yielding a greater profit than B on profitable policies, and also yielding a greater loss on loss producing policies. The reason for this inconsistency is that both methods, in the case of loss producing policies, fail to recognize the additional interest which would accrue to funds allocated to the policies between the financial statement date and the actual payments of losses and expenses. Similarly, in the case of profitable policies, both methods report a premium redundancy which includes interest accrued on profit. Because Method A deals with all in-force cash flows, while Method B deals with only unexpired in-force cash flows, Method A exaggerates this effect of the Issues Paper expected interest calculation.

This problem is clarified by considering an alternative definition:

A premium deficiency is said to exist for an unearned premium liability if expected future payments associated with the unexpired portion of in-force policies are such that the an initial balance of cash (and invested assets) equal to the unearned premium liability less prepaid expenses, after accrual of expected interest and deduction of future policy payments, yields a final balance less than zero. If a premium deficiency exists, then the amount of the premium deficiency is taken to be the amount of additional funds which are necessary, as of the financial statement date, to yield a final balance of zero [less the discount associated with the future payments due to in-force policies (Method A)].

Note that this definition seeks to answer the question of whether funds on hand today, together with interest accumulated against those funds will be adequate to meet policy obligations. Of course the amount of the premium deficiency under this definition is simply the present value of future obligations. For illustrative purposes, a corrected calculation of expected investment income is shown in Exhibit VI. The methodology is altered from the Issues Paper calculation in two areas: 1) The cash opening balance in 1982 is taken to be the unearned premium liability, less the deferred acquisition cost asset. 2) The premium deficiency is taken to be that amount shown in the first column of the calculation, which, when deducted from the cash opening balance, yields a final cash balance of zero. Note that this amount is the same as that obtained in the present value Method B, as expected.

It is apparent that the premium deficiency should be the amount which yields a final cash balance of zero. If either of the Issues Paper expected investment income calculations are used to arrive at the premium deficiency for loss producing contracts, and the resultant amount is deducted from surplus and used as a fund to meet obligations, this fund would have a significant positive balance after all obligations are met. It is inconsistent to argue that a premium deficiency exists when, after collection of premiums and settlement of obligations, the insurer retains a positive amount of money.

The alteration of the cash opening balance in Exhibit VI deserves further consideration: compare the 1982 opening cash balance in Exhibits III and VI, and it is seen that Exhibit VI credits \$126,000, rather than the \$121,438 credited in Exhibit III. The difference of \$4,562 is the paid underwriting costs which are not included in the DAC asset (5.16% of premium), less the investment income on the average cash balance in 1981. The opening balance in Exhibit VI is recognized as the unearned premium reserve, less the DAC asset, because that is the net liability which the balance sheet has allocated to meeting future claim payments. If the \$121,438 amount is used as the opening balance, then the "premium deficiency" would be \$9,463. This deficiency is the economic premium deficiency as described by Marshall: it is the shortfall of accumulated income to discounted outlay as of the financial statement date and represents the insurer's actual loss on the policies. Note, however, that the required opening balance to obtain a final balance of zero would still be \$130,901 (if the opening balance of \$121,438 is used) and that since a liability of \$126,000, after elimination of the DAC asset already exists, that the additional liability is required is still \$4,901. The question of interest is this additional liability needed to meet policy obligations, and thus the unearned premium liability less DAC asset is substituted for the cash balance determined in Exhibit III.

The corrected calculation of expected investment income, Method B, is also shown Exhibit VI. The premium deficiency determined in Method A is reduced by the amount of discount associated with future payments against the expired portion of in-force policies. In this case, the need for a premium deficiency reserve is eliminated.

3. ACTUARIAL PREMIUM DEFICIENCY RESERVES

3.1 Other Future Costs

In addition to the four future costs discussed in the Issues Paper, SOP 78-6 stated that "certain other costs... should also be considered, provided these costs can be attributed to maintaining policies in force." Two categories which should be considered are:

3.1.1 Contingent Commissions

As with policyholder dividends, contingent commissions were traditionally intended to represent a sharing of profit. In the case of contingent commissions, the profits are being shared with the insurance agent, rather than the policyholder. As in the case of policyholder dividends, these commissions may be paid on loss producing contracts for marketing reasons. In such cases they should be included in the determination of the premium deficiency reserve.

3.1.2 Federal Income Taxes

Because the tax law requires recognition of 20% of the change in the unearned premium liability as income, and prescribes a methodology for recognition of investment income which may overstate the true investment income, it is possible to pay federal income tax on loss producing contracts. These taxes should thus be given consideration in the determination of the premium deficiency reserve.

3.2 A Ratemaking Problem

The premium deficiency reserve is based upon the anticipated experience for the in-force business. In the example above, a constant loss ratio of 88% is assumed for the expired and unexpired portions of the in-force premium. The Issues Paper¹⁰ states that: "The expected loss ratio is based upon experience and judgment." The tools developed by casualty actuaries for ratemaking are readily applicable to the problem of developing this key estimate, the loss ratio.

One can refer to the many articles in the Proceedings of the CAS for technical descriptions of methods applicable to specific kinds of insurance. This paper presents a general calculation which allows estimation of the the loss ratios for the expired and unexpired portions of the in-force premium. The results of this calculation are tabulated and may be used for preliminary estimates of premium deficiencies. The desired loss ratios are estimated using relativities to the last expired calendar accident year. Certain simplifying assumptions are made: 1) the level of exposure for policies written in the preceding two calendar years is level, 2) the expected loss ratio is not subject to seasonal variations, 3) all policies are annual term, 4) rates are adjusted annually.

Exhibit VII presents the traditional model of calendar/accident year experience. The horizontal axis represents time, while the vertical axis represents the level of expired portion of a policy whose inception date may be found by tracing a line of slope one from any point on the graph to the time axis. In this representation, the expired calendar accident year is represented by the square ABCF, the expired portion of the in-force experience is represented by the triangle ACF, and the unexpired portion by the triangle FCD. Losses and average rate levels are related to a base of 1.000 as of time 0. The loss ratio relativities to time 0 for ABCF, ACF, and FCD are determined as the ratio of the average loss level for each of these period to the average rate level for each of these periods. The loss ratio indices for ACF and FCD to ABCF are determined as the ratio of the ACF and FCD relativities to the ABCF relativity.

The following variables are used:

- t = annual loss trend,
- r_1 = 2nd previous rate change,
- r_2 = 1st previous rate change,
- x = effective date of rate change.

The trend and rate change variable are expressed as factors, e.g. $t = 1.1$ would indicate a 10% annual loss trend. Given these definitions, the loss and rate relativities for each of the three experience periods are determined according to the following:

$$\text{ABCF Loss Rel.} = \int_0^1 t^z dz = \frac{t^z}{\ln t} \Big|_0^1 = \frac{t - 1}{\ln t} \quad (1)$$

$$\text{ABCF Rate Rel.} = \frac{x^2}{2} + r_1(x - x^2 + \frac{1}{2}) + \frac{r_1 r_2}{2}(1 - 2x + x^2) \quad (2)$$

$$\text{ACF Loss Rel.} = \frac{\int_0^1 z t^z dz}{\int_0^1 z dz} = 2 \left(\frac{t^z}{\ln t} \Big|_0^1 \right) = 2 \left(\frac{t}{\ln t} - \frac{t - 1}{(\ln t)^2} \right) \quad (3)$$

$$\text{ACF Rate Rel.} = \frac{r_1}{2}(x - x^2) + \frac{r_1 r_2}{2}(1 - 2x + x^2) \quad (4)$$

$$\begin{aligned} \text{FCD Loss Rel.} &= t \left(\frac{\int_0^1 (1-z) t^z dz}{\int_0^1 (1-z) dz} \right) = 2t \left(\frac{z t^z}{\ln t} \Big|_0^1 - \frac{t^z}{(\ln t)^2} \Big|_0^1 \right) \\ &= 2t \left(\frac{t - 1}{(\ln t)^2} - \frac{1}{\ln t} \right) \end{aligned} \quad (5)$$

$$\text{FCD Rate Rel.} = \frac{r_1}{2}(x^2) + \frac{r_1 r_2}{2}(1 - x^2) \quad (6)$$

Given these loss and rate relativities, the loss ratio indices for the expired and unexpired portions of the in-force premium relative to the last calendar accident year are given by:

$$\text{Expired (ACF) Loss Ratio Index} = \frac{(3) * (2)}{(4) * (1)}$$

$$\text{Unexpired (FCD) Loss Ratio Index} = \frac{(5) * (2)}{(6) * (1)}$$

These indices have been tabulated in Exhibit VIII for effective dates of 1/1, 4/1, 7/1, and 10/1, loss trends of 5%, 10%, and 15%, and first and second prior rate changes of 10%, 20%, 30%, 40%, and 50%. Using this table, suppose that in the calculation of the premium deficiency reserve in the example developed based upon the anticipated experience of Exhibit I, it is now ascertained that the in-force loss ratio used was simply the expiring calendar accident year loss ratio, and that 1) a loss trend of 10% was operative, 2) first and second prior rate changes were 0% and 10%, respectively, and 3) effective dates for rate changes were July 1 of 1979 and 1980. Referring to Sheet 2 of Exhibit VII, one finds the loss ratio indices of 1.004 and 1.070 for the expired and unexpired portions of the in-force premium, respectively, which yields estimated loss ratios of 88.4% and 94.2% for these periods. As shown in Exhibit VIII, utilizing these loss ratios yields a premium deficiency amounting to \$5,566 under Method B, and an increase of \$131 in the adequacy indication under Method A. (The counter-intuitive result of an increase in the adequacy of the premium along with an increase in the estimated loss ratios is the result of the increased discount associated with increased losses for the unexpired portion of the in-force business.) Thus it can be seen that adjustments in the loss ratio for loss trends and rate changes can lead to material adjustments in the amount of the expected premium deficiency.

3.3 Special Considerations

In any particular circumstance of the calculation of a premium deficiency reserve, there are likely to be considerations less general in nature than those considered in the calculation above. In each case, it will be necessary to ascertain whether any special considerations apply, and to make adjustments to account for those considerations. Three such considerations of which the actuary should be aware are considered below.

3.3.1 Claims Made Coverage and Tail Options

Many companies are now offering, or have been offering, claims made coverage for liability exposures. In general pricing for this coverage is developed on a "pure" claims made basis, i.e. no provision is made for occurrences which are reported after the expiration of the policy. The actual coverage which is typically offered for professional liability, however, frequently includes a provision for free coverage for losses reported subsequent to expiration ("tail" coverage) in the event of death, disability, or retirement of the named insured. In such cases it is necessary to consider whether there is a premium deficiency associated with the free tail coverage. Typically this will include utilization of mortality and morbidity tables for estimation of the effects associated with the death and disability provisions, together with some tabulation of the withdrawal and retirement rates. Retirement coverage may not take effect without a vesting period or before a minimum age, and the effects of these provisions must also be considered.

3.3.2 Participation in Involuntary Business

One of the obligations associated with writing certain lines of business such as private passenger auto is that each company must share in the experience of the related involuntary market (e.g. Assigned Risk Plan, Joint Underwriting Association, Reinsurance Facility, or Fair Plan). The expectation of the insurance industry as a whole is that risks in the the involuntary pool will be loss producers and generally historical

experience has confirmed this expectation. Typically, a company's participation in involuntary business is based on business written a few years earlier. If the expected loss from future involuntary business related to the current in force business is evaluated as probable, then consistent with the logic underlying the recognition of a premium deficiency reserve, this loss should be recognized as a cost in the premium deficiency reserve computation. Naturally the quantification of this loss amount is difficult; in effect the problem is to estimate what the size of the involuntary market will be several years hence, and what combined ratio that market will produce. Given the estimation problem, it may be argued that the loss is not "reasonably estimable" and that hence in accordance with FAS 5 it is not necessary to accrue a loss. FASB Interpretation No. 14, **Reasonable Estimation of the Amount of a Loss**¹¹, provides guidance in this area. In particular, this interpretation states that "When no amount [of loss] is a better estimate than any other amount, however, the minimum amount of the range shall be accrued." It would appear from this interpretation that if safe best case assumptions lead to a probable loss, than at least that much loss should be recognized. Furthermore, the interpretation may require disclosure of the exposure to additional loss if only the minimum amount of the loss is accrued.

Of course, in force business is not the only category that will generate a probable future loss from involuntary business. Any policy considered in the allocation formula of future involuntary business whether expired or unexpired will logically have a cost of involuntary business associated with it. Thus an additional liability for business other than that in-force should be considered. Such a liability would not be part of the premium deficiency reserve since it would not be related to the unearned exposures on the insurer's books as of the financial statement date.

3.3.3 Variations In Exposure During Policy Period

The model developed above considers the case of level exposures written during the preceding years. If there has been marked growth in the exposures, then the effect of rate changes upon the unexpired portion of the in-force premium will be more significant than in the case considered above. Treatment of these circumstances will require utilization of techniques of the kind developed in **A Refined Model for Premium Adjustments**¹².

NOTES

1. Insurance Companies Committee, Auditing Standards Division, American Institute of Certified Public Accountants, "Computation of Premium Deficiencies in Insurance Enterprises," Issues Paper, (March 26, 1984)
2. Financial Accounting Standards Board, "Accounting for Contingencies", Statement of Financial Accounting Standards No.5, (Stamford, CT: FASB, March 1975), paragraph 8.
3. Accounting Standards Division, American Institute of Certified Public Accountants, "Accounting for Property and Liability Insurance Companies," Statement of Position 78-6, (July 28, 1978), pp. 12-22.
4. Financial Accounting Standards Board, "Accounting and Reporting by Insurance Enterprises", Statement of Financial Accounting Standards No. 60, (Stamford, CT: FASB, June 1982), paragraph 32.
5. Issues Paper, paragraphs 51-53.
6. Issues Paper, paragraph 51.
7. Issues Paper, paragraph 50.
8. Issues Paper, paragraph 51.
9. Marshall, Alfred, Principles of Economics, 8th Ed., (Philadelphia, PA: The Porcupine Press, 1982), pp. 293-294
10. Issues Paper, page 31.
11. Financial Accounting Standards Board, "Reasonable Estimation of the Amount of a Loss", FASB Interpretation No. 14, (Stamford, CT: FASB, September 1976), paragraph 3.
12. Miller, D. L. and Davis, G. E., "A Refined Model for Premium Adjustment," Proceedings of the Casualty Actuarial Society, Vol. LXIII, (New York: Casualty Actuarial Society, 1976), p. 117

	Anticipated Experience			Exhibit I
	=====			
	Earned On			
	Unexpired	Unearned	In-force	
	-----	-----	-----	
Premium	182,000	168,000	350,000	
Exp. Loss & LAE Ratio	88%	88%	88%	
	-----	-----	-----	
Expected Loss and LAE	160,160	147,840	308,000	
	=====	=====	=====	

Anticipated Settlement Pattern			
=====			
Payment	1981 %	Claims to	Claims to
Year	Paid	1981 EP	1982 EP

1981	32.0%	51,251	
1982	28.0%	44,845	47,309
1983	15.0%	24,024	41,395
1984	12.0%	19,219	22,176
1985	8.0%	12,813	17,741
1986	5.0%	8,008	11,827
1987			7,392

Premium Deficiency Computation
 Expected Investment Income Approach
 Based On All In-Force Premiums

Computation Of Expected Investment Income (A)								

Year	Cash Opening Balance	Premium Received	30.16% U/W Costs Paid	88.00% Claims Paid	0.83% Mainten- ance Cost	Cash Ending Balance	Cash Average Balance	7.00% Investment Income
1981		350,000	(105,560)	(51,251)		193,189	96,594	6,762
1982	199,950			(92,154)	(1,043)	106,754	153,352	10,735
1983	117,489			(65,419)	(740)	51,329	84,409	5,909
1984	57,238			(41,395)	(468)	15,374	36,306	2,541
1985	17,916			(30,554)	(346)	(12,983)	2,466	173
1986	(12,811)			(19,835)	(224)	(32,870)	(22,841)	(1,599)
1987	(34,469)			(7,392)	(84)	(41,945)	(38,207)	(2,674)
Tot.		350,000	(105,560)	(308,000)	(2,905)			21,846

Expected Investment Income (1982-1987) 15,084

Premium Deficiency Test

Unearned Premium as of 12/31/81 168,000

Less Expected Costs:

Loss and LAE Costs 147,840
 Maintenance Costs 2,905
 Amort. of DAC at 25% 42,000

192,745

Gross Premium Deficiency (24,745)

Expected Investment Income 15,084

Excess of Income over Costs (9,661)

Premium Deficiency Computation
Expected Investment Income Approach
Based On Unearned Premiums Only

Computation Of Expected Investment Income (B)

=====								
	Cash		30.16%	88.00%	0.83%	Cash	Cash	7.00%
	Opening	Premium U/W	Costs	Claims	Mainten-	Ending	Average	Investment
Year	Balance	Received	Paid	Paid	ance	Cost	Balance	Income

1981		168,000	(50,669)			117,331	58,666	4,107
1982	121,438			(47,309)		(446)	73,683	97,560
1983	80,512			(41,395)		(390)	38,726	59,619
1984	42,900			(22,176)		(209)	20,515	31,707
1985	22,734			(17,741)		(167)	4,826	13,780
1986	5,791			(11,827)		(112)	(6,148)	(179)
1987	(6,161)			(7,392)		(70)	(13,622)	(9,892)

Tot.		168,000	(50,669)	(147,840)		(1,394)		17,588

Expected Investment Income (1982-1987) 13,482

=====

Premium Deficiency Test

=====

Unearned Premium as of 12/31/81	168,000
Less Expected Costs:	
Loss and LAE Costs	147,840
Maintenance Costs	1,394
Amort. of DAC at 25%	42,000
	191,234
Gross Premium Deficiency	(23,234)
Expected Investment Income	13,482
Excess of Income over Costs	(9,753)

=====

Exhibit IV

Premium Deficiency Computation
 Present Value of Future Payments Approach
 Based On All In-Force Premiums

Present Value of Claims and Maintenance Costs (A)

Payment Year	88.00% Claims Paid	0.83% Mainten- ance Cost	Total Payments	7.00% PV Factors	PV of Payments
1982	92,154	1,043	93,196	0.9667	90,096
1983	65,419	740	66,159	0.9035	59,774
1984	41,395	468	41,864	0.8444	35,349
1985	30,554	346	30,899	0.7891	24,384
1986	19,835	224	20,060	0.7375	14,794
1987	7,392	84	7,476	0.6893	5,153
Total	256,749	2,905	259,654		229,551

Less: Unpaid Loss & LAE @ 12/31/86	
Payments Against 1981 EP	161,671
less: Payments Made in 1981	51,251

	110,419

	119,131
	=====

Premium Deficiency Test

Unearned Premium as of 12/31/81	168,000
Less Expected Costs:	
PV of Future Payments	119,131
Amort. of DAC at 25%	42,000

	161,131

Excess of Income over Costs	6,869
	=====

Exhibit V

Premium Deficiency Computation
 Present Value of Future Payments Approach
 Based On Unearned Premiums

Present Value of Claims and Maintenance Costs (B)

Payment Year	88.00% Claims Paid	0.83% Mainten- ance Cost	Total Payments	7.00% PV Factors	PV of Payments
1982	47,309	446	47,755	0.9667	46,167
1983	41,395	390	41,786	0.9035	37,753
1984	22,176	209	22,385	0.8444	18,902
1985	17,741	167	17,908	0.7891	14,132
1986	11,827	112	11,939	0.7375	8,805
1987	7,392	70	7,462	0.6893	5,143
Total	147,840	1,394	149,234		130,901

Premium Deficiency Test

Unearned Premium as of 12/31/81	168,000
Less Expected Costs:	
PV of Future Payments	130,901
Amort. of DAC at 25%	42,000
	172,901
Excess of Income over Costs	(4,901)

Effect of Changes in Loss Ratio

Exhibit VI

..... Estimated Premium Deficiencies

Loss & Investment LAE Ratio	Investment Income (A)	Investment Income (B)	Present Value (A)	Present Value (B)
68%	49,086	34,503	33,704	24,571
73%	34,399	23,439	26,995	17,203
78%	19,713	12,375	20,286	9,835
83%	5,026	1,311	13,577	2,467
88%	(9,661)	(9,753)	6,869	(4,901)
93%	(24,348)	(20,817)	160	(12,270)
98%	(39,034)	(31,880)	(6,549)	(19,638)

Corrected Computation Of Expected Investment Income (B)

Premium Deficiency Year	Cash Opening Balance	Premium Received	30.16% U/W Costs Paid	0.00% Claims Paid	0.83% Mainten- ance Cost	Cash Ending Balance	Cash Average Balance	7.00% Investment Income
1981		168,000	(50,669)			117,331	58,666	4,107
(4,901) 1982	126,000			(47,309)	(446)	83,146	107,023	7,492
1983	90,638			(41,395)	(390)	48,852	69,745	4,882
1984	53,734			(22,176)	(209)	31,349	42,542	2,978
1985	34,327			(17,741)	(167)	16,419	25,373	1,776
1986	18,195			(11,827)	(112)	6,256	12,225	856
1987	7,112			(7,392)	(70)	(350)	3,381	237
Tot.			(50,669)	(147,840)	(1,394)			22,327

Final Cash Balance (113)

Corrected Computation Of Expected Investment Income (A)

Corrected Expected Investment Income Premium Deficiency (B) (4,901)

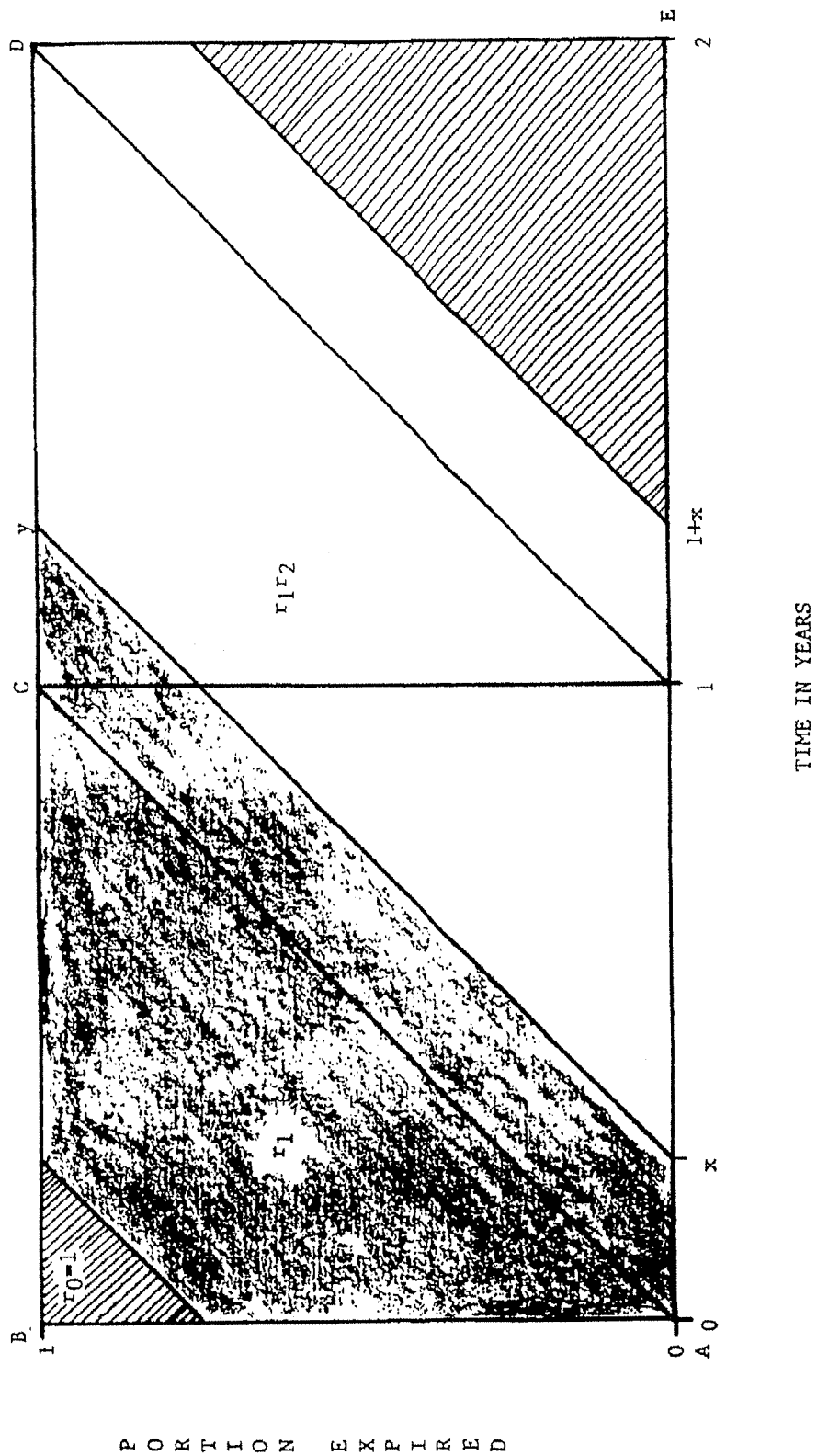
Less: Discount on Expired In-Force Future Payments

Discount on All In-Force Future Payments	30,103
Less: Discount on Unexpired In-Force Future Payments	18,333
	11,770

Corrected Expected Investment Income Premium Deficiency (A) 6,869

EXHIBIT VII

PREMIUM DEFICIENCY RESERVES EXPIRED & UNEXPIRED LOSS RATIO INDICES



Loss Ratio Indices to First Previous Calendar Accident Year

Exhibit VII

Sheet 1

Assumptions: Loss Trend - 5%

Effective Date - 1/1

2nd Prior Rate Change	Indices for Expired In-Force Loss Ratio -----First Prior Rate Change-----					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.008	0.962	0.924	0.892	0.864	0.840
1.1	1.008	0.962	0.924	0.892	0.864	0.840
1.2	1.008	0.962	0.924	0.892	0.864	0.840
1.3	1.008	0.962	0.924	0.892	0.864	0.840
1.4	1.008	0.962	0.924	0.892	0.864	0.840
1.5	1.008	0.962	0.924	0.892	0.864	0.840

Assumptions: Loss Trend - 5%

Effective Date - 4/1

2nd Prior Rate Change	Indices for Expired In-Force Loss Ratio -----First Prior Rate Change-----					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.008	0.981	0.957	0.935	0.916	0.897
1.1	1.005	0.979	0.955	0.933	0.913	0.895
1.2	1.003	0.976	0.952	0.931	0.911	0.893
1.3	1.001	0.974	0.951	0.929	0.910	0.892
1.4	0.999	0.973	0.949	0.928	0.908	0.890
1.5	0.998	0.971	0.948	0.926	0.907	0.889

2nd Prior Rate Change	Indices for Unexpired In-Force Loss Ratio -----First Prior Rate Change-----					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.041	0.994	0.955	0.921	0.893	0.868
1.1	1.041	0.994	0.955	0.921	0.893	0.868
1.2	1.041	0.994	0.955	0.921	0.893	0.868
1.3	1.041	0.994	0.955	0.921	0.893	0.868
1.4	1.041	0.994	0.955	0.921	0.893	0.868
1.5	1.041	0.994	0.955	0.921	0.893	0.868

2nd Prior Rate Change	Indices for Unexpired In-Force Loss Ratio -----First Prior Rate Change-----					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.041	0.979	0.926	0.881	0.843	0.809
1.1	1.039	0.976	0.924	0.879	0.840	0.807
1.2	1.036	0.974	0.922	0.877	0.839	0.805
1.3	1.034	0.972	0.920	0.876	0.837	0.804
1.4	1.032	0.970	0.919	0.874	0.836	0.802
1.5	1.031	0.969	0.917	0.873	0.835	0.801

Assumptions: Loss Trend - 5%

Effective Date - 7/1

2nd Prior Rate Change	Indices for Expired In-Force Loss Ratio -----First Prior Rate Change-----					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.008	0.996	0.984	0.973	0.962	0.952
1.1	0.997	0.985	0.973	0.962	0.952	0.942
1.2	0.987	0.975	0.964	0.953	0.943	0.933
1.3	0.979	0.967	0.956	0.946	0.936	0.926
1.4	0.972	0.961	0.950	0.939	0.930	0.920
1.5	0.966	0.955	0.944	0.934	0.924	0.915

Assumptions: Loss Trend - 5%

Effective Date - 10/1

2nd Prior Rate Change	Indices for Expired In-Force Loss Ratio -----First Prior Rate Change-----					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.008	1.005	1.002	0.999	0.996	0.993
1.1	0.982	0.979	0.976	0.974	0.971	0.968
1.2	0.961	0.958	0.955	0.952	0.950	0.947
1.3	0.943	0.940	0.937	0.935	0.932	0.929
1.4	0.927	0.924	0.922	0.919	0.917	0.914
1.5	0.914	0.911	0.909	0.906	0.904	0.901

2nd Prior Rate Change	Indices for Unexpired In-Force Loss Ratio -----First Prior Rate Change-----					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.041	0.981	0.928	0.882	0.841	0.805
1.1	1.030	0.970	0.918	0.872	0.832	0.796
1.2	1.020	0.961	0.909	0.864	0.824	0.789
1.3	1.011	0.953	0.902	0.858	0.818	0.783
1.4	1.004	0.946	0.896	0.852	0.813	0.778
1.5	0.998	0.941	0.891	0.847	0.808	0.773

2nd Prior Rate Change	Indices for Unexpired In-Force Loss Ratio -----First Prior Rate Change-----					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.041	1.001	0.964	0.929	0.897	0.868
1.1	1.015	0.975	0.939	0.906	0.875	0.846
1.2	0.993	0.954	0.919	0.886	0.856	0.828
1.3	0.974	0.936	0.901	0.870	0.840	0.812
1.4	0.958	0.921	0.887	0.855	0.826	0.799
1.5	0.944	0.907	0.874	0.843	0.814	0.788

Loss Ratio Indices to First Previous Calendar Accident Year

Exhibit VII

Sheet 2

Assumptions: Loss Trend - 10%
Effective Date - 1/1

Assumptions: Loss Trend - 10%
Effective Date - 4/1

2nd Prior Rate Change	Indices for Expired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.016	0.970	0.931	0.899	0.871	0.847
1.1	1.016	0.970	0.931	0.899	0.871	0.847
1.2	1.016	0.970	0.931	0.899	0.871	0.847
1.3	1.016	0.970	0.931	0.899	0.871	0.847
1.4	1.016	0.970	0.931	0.899	0.871	0.847
1.5	1.016	0.970	0.931	0.899	0.871	0.847

2nd Prior Rate Change	Indices for Expired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.016	0.989	0.965	0.943	0.923	0.904
1.1	1.013	0.986	0.962	0.940	0.920	0.902
1.2	1.011	0.984	0.960	0.938	0.918	0.900
1.3	1.009	0.982	0.958	0.936	0.917	0.899
1.4	1.007	0.980	0.956	0.935	0.915	0.897
1.5	1.005	0.979	0.955	0.933	0.914	0.896

2nd Prior Rate Change	Indices for Unexpired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.083	1.033	0.992	0.958	0.928	0.902
1.1	1.083	1.033	0.992	0.958	0.928	0.902
1.2	1.083	1.033	0.992	0.958	0.928	0.902
1.3	1.083	1.033	0.992	0.958	0.928	0.902
1.4	1.083	1.033	0.992	0.958	0.928	0.902
1.5	1.083	1.033	0.992	0.958	0.928	0.902

2nd Prior Rate Change	Indices for Unexpired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.083	1.018	0.963	0.916	0.876	0.841
1.1	1.079	1.015	0.960	0.914	0.874	0.839
1.2	1.077	1.012	0.958	0.912	0.872	0.837
1.3	1.075	1.010	0.956	0.910	0.870	0.835
1.4	1.073	1.009	0.955	0.909	0.869	0.834
1.5	1.071	1.007	0.953	0.907	0.868	0.833

Assumptions: Loss Trend - 10%
Effective Date - 7/1

Assumptions: Loss Trend - 10%
Effective Date - 10/1

2nd Prior Rate Change	Indices for Expired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.016	1.003	0.992	0.980	0.970	0.959
1.1	1.004	0.992	0.981	0.970	0.959	0.949
1.2	0.995	0.983	0.972	0.961	0.950	0.941
1.3	0.987	0.975	0.964	0.953	0.943	0.933
1.4	0.980	0.968	0.957	0.947	0.937	0.927
1.5	0.974	0.962	0.951	0.941	0.931	0.922

2nd Prior Rate Change	Indices for Expired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.016	1.013	1.010	1.007	1.003	1.000
1.1	0.990	0.987	0.984	0.981	0.978	0.975
1.2	0.968	0.965	0.963	0.960	0.957	0.954
1.3	0.950	0.947	0.944	0.942	0.939	0.937
1.4	0.934	0.932	0.929	0.926	0.924	0.921
1.5	0.921	0.918	0.916	0.913	0.911	0.908

2nd Prior Rate Change	Indices for Unexpired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.083	1.020	0.965	0.917	0.874	0.836
1.1	1.070	1.008	0.954	0.907	0.865	0.828
1.2	1.060	0.999	0.945	0.898	0.857	0.820
1.3	1.051	0.991	0.938	0.891	0.850	0.814
1.4	1.044	0.984	0.931	0.885	0.845	0.808
1.5	1.037	0.978	0.926	0.880	0.840	0.804

2nd Prior Rate Change	Indices for Unexpired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.083	1.040	1.002	0.966	0.933	0.902
1.1	1.055	1.014	0.976	0.941	0.909	0.879
1.2	1.032	0.992	0.955	0.921	0.890	0.860
1.3	1.012	0.973	0.937	0.904	0.873	0.844
1.4	0.996	0.957	0.922	0.889	0.859	0.831
1.5	0.981	0.943	0.908	0.876	0.846	0.819

Assumptions: Loss Trend - 15%
Effective Date - 1/1

2nd Prior Rate Change	Indices for Expired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.023	0.977	0.938	0.905	0.877	0.853
1.1	1.023	0.977	0.938	0.905	0.877	0.853
1.2	1.023	0.977	0.938	0.905	0.877	0.853
1.3	1.023	0.977	0.938	0.905	0.877	0.853
1.4	1.023	0.977	0.938	0.905	0.877	0.853
1.5	1.023	0.977	0.938	0.905	0.877	0.853

2nd Prior Rate Change	Indices for Unexpired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.123	1.072	1.030	0.994	0.963	0.936
1.1	1.123	1.072	1.030	0.994	0.963	0.936
1.2	1.123	1.072	1.030	0.994	0.963	0.936
1.3	1.123	1.072	1.030	0.994	0.963	0.936
1.4	1.123	1.072	1.030	0.994	0.963	0.936
1.5	1.123	1.072	1.030	0.994	0.963	0.936

Assumptions: Loss Trend - 15%
Effective Date - 7/1

2nd Prior Rate Change	Indices for Expired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.023	1.011	0.999	0.988	0.977	0.966
1.1	1.012	0.999	0.988	0.977	0.966	0.956
1.2	1.002	0.990	0.979	0.968	0.957	0.947
1.3	0.994	0.982	0.971	0.960	0.950	0.940
1.4	0.987	0.975	0.964	0.954	0.944	0.934
1.5	0.981	0.969	0.958	0.948	0.938	0.929

2nd Prior Rate Change	Indices for Unexpired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.123	1.058	1.001	0.951	0.907	0.868
1.1	1.110	1.046	0.990	0.941	0.897	0.859
1.2	1.100	1.036	0.981	0.932	0.889	0.851
1.3	1.091	1.028	0.973	0.925	0.882	0.844
1.4	1.083	1.021	0.966	0.919	0.876	0.839
1.5	1.076	1.014	0.960	0.913	0.871	0.834

Assumptions: Loss Trend - 15%
Effective Date - 4/1

2nd Prior Rate Change	Indices for Expired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.023	0.996	0.972	0.949	0.929	0.911
1.1	1.020	0.993	0.969	0.947	0.927	0.909
1.2	1.018	0.991	0.967	0.945	0.925	0.907
1.3	1.016	0.989	0.965	0.943	0.923	0.905
1.4	1.014	0.987	0.963	0.942	0.922	0.904
1.5	1.013	0.986	0.962	0.940	0.921	0.903

2nd Prior Rate Change	Indices for Unexpired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.123	1.056	0.999	0.951	0.909	0.872
1.1	1.120	1.053	0.996	0.948	0.906	0.870
1.2	1.117	1.050	0.994	0.946	0.905	0.868
1.3	1.115	1.048	0.992	0.944	0.903	0.867
1.4	1.113	1.047	0.991	0.943	0.901	0.865
1.5	1.112	1.045	0.989	0.941	0.900	0.864

Assumptions: Loss Trend - 15%
Effective Date - 10/1

2nd Prior Rate Change	Indices for Expired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.023	1.020	1.017	1.014	1.011	1.008
1.1	0.997	0.994	0.991	0.988	0.985	0.982
1.2	0.975	0.972	0.970	0.967	0.964	0.961
1.3	0.957	0.954	0.951	0.949	0.946	0.943
1.4	0.941	0.938	0.936	0.933	0.931	0.928
1.5	0.927	0.925	0.922	0.920	0.917	0.915

2nd Prior Rate Change	Indices for Unexpired In-Force Loss Ratio [-----First Prior Rate Change-----]					
	1.0	1.1	1.2	1.3	1.4	1.5
1.0	1.123	1.080	1.039	1.002	0.968	0.936
1.1	1.095	1.052	1.013	0.977	0.943	0.912
1.2	1.071	1.029	0.991	0.956	0.923	0.893
1.3	1.050	1.010	0.972	0.938	0.906	0.876
1.4	1.033	0.993	0.956	0.922	0.891	0.862
1.5	1.018	0.979	0.942	0.909	0.878	0.850

Corrected Computation Of Expected Investment Income (B)

Premium Deficiency Year	Cash	Premium	30.16% U/W Costs	0.00% Claims	0.83% Maintenance Cost	Cash	Cash	7.00% Investment
	Opening Balance	Received	Paid	Paid		Ending Balance	Average Balance	Income
1981		168,000	(50,669)			117,331	58,666	4,107
(5,566) 1982	126,000			(47,524)	(446)	83,596	107,581	7,531
1983	91,127			(41,583)	(390)	49,153	70,140	4,910
1984	54,063			(22,277)	(209)	31,577	42,820	2,997
1985	34,574			(17,821)	(167)	16,585	25,580	1,791
1986	18,376			(11,881)	(112)	6,383	12,380	867
1987	7,250			(7,426)	(70)	(245)	3,502	245
Tot.			(50,669)	(148,512)	(1,394)			22,447

Final Cash Balance (0)

Corrected Computation Of Expected Investment Income (A)

Corrected Expected Investment Income Premium Deficiency (B)	(5,566)
Less: Discount on Expired In-Force Future Payments	
Discount on All In-Force Future Payments	31,002
Less: Discount on Unexpired In-Force Future Payments	18,415
	12,587
Corrected Expected Investment Income Premium Deficiency (A)	7,021

*Considerations in the Calculation of
Premium Deficiency Reserves
(Under U.S. accounting rules)*

Ralph S. Blanchard, III, FCAS, MAAA

Abstract

Effective in 2001, statutory accounting rules will change as a result of the NAIC's (National Association of Insurance Commissioners's) "codification" project. One of these changes will be the creation of a new statutory reserve requirement for property/casualty companies, the required calculation of a "premium deficiency reserve". Although these reserves have been required under U.S. GAAP accounting rules for quite some time, there has been little said about them in the available actuarial literature, especially as to how they might be calculated. This paper is meant to address that gap, both as to current U.S. GAAP accounting rules and the new statutory accounting rules (including a discussion as to how the premium deficiency reserve differs under these two accounting systems).

Introduction

What are Premium Deficiency Reserves, and why are they an emerging issue for property/casualty companies?

The Premium Deficiency Reserve represents the expected loss on in-force policies that has yet to otherwise be recorded. A simplistic calculation would be the unearned premium reserve, less "the sum of expected claim costs and claim adjustment expenses, expected dividends to policyholders, unamortized acquisition costs¹, and maintenance costs"² relating to the unearned premium reserve. Starting January 1, 2001, the calculation of these reserves will be required for the first time under statutory accounting, greatly expanding the number of companies impacted by the reserve, even if only a few of the calculations result in a non-zero value.

These reserves have been a requirement under U.S. GAAP accounting rules at least since the issuance of Financial Accounting Standards Board - Statement 60 (FAS 60)³, in 1982. FAS 60 devotes only two sentences to guidance on how the reserve is to be calculated⁴. An Issues Paper on the computation of premium deficiency reserves was circulated by the AICPA⁵ in 1984, but

¹ "Unamortized acquisition costs" include both acquisition costs *yet* to be paid (and associated with this unearned premium) and any such costs that have *already* been paid, but were then offset in the income statement by the establishment of a deferred acquisition cost (DAC) asset. Note that this and the other terms in this quote are discussed later, in B.2 - "Issues affecting individual components" of this paper.

² Financial Accounting Standards Board (FASB), Statement # 60 - Accounting and Reporting by Insurance Enterprises, paragraph 33. This FASB statement is often abbreviated as SFAS 60, or FAS 60.

³ FAS 60 stands for Financial Accounting Standard 60.

⁴ for short-duration contracts. FAS 60 provides separate accounting rules for what are described as short-duration versus long-duration contracts. Most property/casualty contracts are considered short-duration contracts, while most life insurance contracts are considered long-duration contracts. While no definitive definition is given in FAS 60, paragraph 7 describes a short-duration contract as a contract that "provides insurance protection for a fixed period of short duration and enables the insurer to cancel the contract or to adjust the provisions of the contract at the end of any contract period, such as adjusting the amount of premiums charged or coverage provided."

The two sentences regarding premium deficiency reserves and short-duration contracts are found at the end of paragraph 32 and the beginning of paragraph 33 in FAS 60.

The FASB is working on a "fair value" project for financial instruments. If applied to insurance, this project would eliminate the need for a premium deficiency reserve, as it would require establishing the loss and unearned premium reserves at what their "fair value" would be. Presumably this fair value would already reflect any deficiency in the original premium.

⁵ AICPA stands for the American Institute of Certified Public Accountants. This issue paper, titled "Computation of Premium Deficiencies in Insurance Enterprises" was sent to the FASB in March, 1984.

FASB took no action on it, hence it is not authoritative guidance. As a result, the only guidance for U.S. GAAP purposes comes from private publications with no authoritative standing, such as those used internally by the big 5 accounting firms.

Statutory accounting rules never used to mention this reserve. This changed with the NAIC's attempt to standardize, or codify⁶, statutory accounting rules. The resulting Statement of Statutory Accounting Principles Number 53 (SSAP 53) establishes a premium deficiency reserve requirement, effective January 1, 2001. Only one paragraph is devoted to describing their calculation.⁷

This paper is an attempt to address the lack of guidance or public discussion on the premium deficiency reserve calculation⁸, especially for the actuarial audience. It will address issues and possible calculation alternatives for GAAP and statutory accounting of property/casualty premium deficiency reserves, for short duration policies only. It is not authoritative guidance, as such guidance can only be produced by an official "standards" body, but hopefully it will be an educational reference for those interested in or responsible for calculating these reserves.

The rest of this paper is organized into the following sections.

- A. Simple calculation example - fundamental steps in the calculation of these reserves.
- B. Issues - including Stat vs. GAAP differences. Each issue will be discussed in relation to the impact on fundamental steps.
- C. Suggested multi-tier approach - a suggestion as to how to minimize the effort and resources required to calculate these reserves.
- D. Data sources - a brief discussion of the major alternative data sources that can be used in parameterizing the Premium Deficiency Reserve (PDR) calculation, and their strengths and weaknesses.
- E. Findings and conclusions

A. Simple calculation example

Below is a simple example of how the premium deficiency reserve can be calculated, both under GAAP and Statutory accounting rules. The example shows the components of the calculation in the same order as the description in the introduction. (All future examples will follow the same order, so that the impact of each added complication can be more easily tracked.)

⁶ This project became known as the "codification" project. A brief summary of the codification project can be found in the preamble to the NAIC's Accounting Practices and Procedures Manual. For the March 2000 edition of the version effective January 1, 2001, this summary is found on pages P-3 and P-4.

⁷ For certain long-duration property/casualty contracts, such as long term warranties, there is at least one paragraph (# 29) in SSAP 65 describing a required reserve calculation that looks like a premium deficiency reserve.

⁸ There was a discussion concerning Canadian premium deficiency reserve requirements, titled "Study Note on Actuarial Evaluation of Premium Liabilities", published in the Fall 1999 CAS Forum. While many of the concepts underlying the calculation in Canada are the same, there are enough differences in U.S. versus Canadian accounting to justify a separate discussion.

This example makes the following simplifying assumptions:

- Premiums are all booked, billed and collected up-front, with no installments and no agents balances issues.
- No reflection of time value of money will be made.
- The company has only one legal entity (statutory accounting issue)
- The company writes only one line, with all business acquired, serviced, and measured (as to profitability) in the same manner
- No federal income taxes (FIT)
- No reinsurance impacts

Table 1 - simple Premium Deficiency Reserve calculation

Accounting rules	Scenario	Unearned Premiums	Expected L&LAE	Expected policyholder dividends	unamortized acquisition costs	maint. costs	Profit	Premium Deficiency Reserve
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
GAAP	A	100	60	5	20	5	10	0
	B	100	80	5	20	5	-10	10
	C	100	100	5	20	5	-30	30
Statutory	A	100	60	-	0	5	35	0
	B	100	80	-	0	5	15	0
	C	100	100	-	0	5	-5	5

Notes:

item (f), "Profit" equals (a) - (b) - (c) - (d) - (e)

item (c) is not included in the statutory calculation instructions

item (d) should be the same for statutory and GAAP calculations, except for the impact of amortizing the deferred acquisition cost (DAC) asset. Statutory accounting does not allow DAC assets..

Note that the premium deficiency reserve (PDR) can go no lower than zero. As such, once it has been established that the floor of zero applies, the reserve calculation is finished. This aspect of the PDR can be used to greatly simplify its calculation. (See discussion in section C below.)

GAAP accounting rules require any premium deficiency reserve to be reflected first as a reduction to the deferred acquisition cost asset. Only after this asset has been fully offset would a separate premium deficiency liability appear. The table below shows the impact of these rules applied to the simple example above.

Table 2 - accounting balance sheet entries resulting from simple example

Scenario	GAAP accounting				statutory accounting	
	Indicated PDR	DAC asset		net PDR liability	PDR liability	DAC asset
		pre-offset	post offset			
A	0	20	20	0	0	na
B	10	20	10	0	0	na
C	30	20	0	10	5	na

B. Issues

If the PDR calculation was always as simple as the above example, then there would not be a need for this paper. Unfortunately, the calculation of this reserve can become extremely complex.

Major complicating issues in the calculation of this reserve are discussed below. The first issues discussed are those affecting *all* of the reserve components⁹ in the simple example. Next, the issues affecting just individual components are discussed. All the examples provided of an issue's impact follow the same general format as in the simple example above.

1. Issues affecting all reserve components
 - a) Risk margin / conservatism
 - b) Time value of money
 - c) Actual costs versus expected costs
 - d) Line of business groupings and offsets
 - e) GAAP versus statutory differences
 - f) Reinsurance
2. Issues affecting individual components
 - a) Interest rate
 - b) Premium issues
 - c) Losses & loss adjustment expenses
 - d) Policyholder dividends
 - e) Acquisition costs
 - f) Maintenance costs
 - g) Other (including FIT)

1. Issues affecting all reserve components

a. Risk Margin / Conservatism

The premium deficiency reserve is meant to reflect the *expected* deficiency in the in-force premiums. It is not meant to reflect the *possible* deficiency in those premiums. That is the job of the company's capital and surplus. As such, there should be no adjustment for risk or reflection of risk in the parameters selected in the reserve calculation, even when reflecting the time value of money (discussed later).

Support for the statement that only the *expected* deficiency is recognized comes from the premium deficiency reserve accounting guidance, and accounting guidance on loss reserves.

The GAAP premium deficiency reserve guidance (FAS 60) uses the terms "*expected* claim costs and claim adjustment expenses" and "*expected* dividends to policyholders". The corresponding

⁹ These components are: (Unearned) premiums, loss and loss expense, policyholder dividends (GAAP only), acquisition costs, maintenance costs.

statutory guidance (SSAP 53) uses the term "*anticipated* losses, loss adjustment expenses, and maintenance costs"¹⁰

The GAAP general guidance relative to all estimates (including loss reserves) is that they be free from bias^{11 12}. The statutory guidance relative to loss estimates comes from SSAP 55, which requires claim liabilities to be set at management's "best estimate", again implying an unbiased value¹³.

b. Time value of money

It is less obvious how to reflect the time value of money in this calculation¹⁴. Neither GAAP nor statutory accounting guidance discuss how to reflect the time value of money, or even if it is allowed. The only reference (under both accounting standards) is required disclosure if "anticipated investment income"¹⁵ was reflected in the PDR calculation. (This required disclosure can be considered implicit approval of the practice by both GAAP and statutory

¹⁰ All italics in this paragraph's quotes were added for emphasis. These italics do not exist in the original source.

¹¹ FASB Concepts Statement 2 and 5 include discussion of conservatism and neutrality.

¹² There is an exception to this guidance that applies to long-duration insurance contracts. FAS 60, paragraph 15 requires that the premium for long-duration contracts (e.g., a whole life insurance contracts) be recognized fully when due from the policyholder, i.e., there is no such thing as "unearned premium". This creates the need to set up a "liability for future policy benefits", or "policy reserve". GAAP rules (FAS 60, paragraph 21) require that this reserve be set up at the expected value, plus a "provision for the risk of adverse deviation". This provision for adverse deviation offsets the fact that initial reserving assumptions for this contract are not allowed to change in future reportings (i.e., they are "locked in"), unless a premium deficiency situation exists. Such a premium deficiency situation only exists if "anticipated" (i.e., not conservatively estimated) future net payouts, on a present value basis, are greater than the existing policy reserve (which includes the provision for adverse deviation). The above discussion points out three areas of difference between current U.S. accounting for short-duration versus long-duration policies under FAS 60:

- a) when premium is recognized (or "earned")
- b) when reserving assumptions are updated.
- c) whether a provision for adverse deviation is allowed.

My belief is that the constant updating of property/casualty reserving assumptions at each valuation date (called a "fresh start" accounting approach), and the use of the full unearned premium reserve until the losses are incurred, eliminate the need for a provision for adverse deviation in financial accounts.

(Note: Additional differences between long-duration and short-duration accounting also exist for policyholder dividends.)

¹³ Interestingly, despite the GAAP concept that the reported values be free from bias, the 1984 AICPA Issues paper on this reserve advocated a conservative approach to the payment pattern assumption, when time value of money is to be considered. The same paper did not see any need for a conservative valuation for any other item in the calculation, such as the interest rate, loss ratio, etc..

Statutory accounting concepts advocate a bias towards conservative valuation, although this is not applied universally in its rules. For example, loss reserves are required to be established at a "best estimate" level, not a conservative level. The use of risk-based capital and other financial regulatory tools (e.g. laws limiting investment choices for insurers) allow for conservatism and risk reflection to be addressed in places other than the accounting.

¹⁴ Note that there is no need to reflect the time value of money if not reflecting it still results in an indicated PDR of zero. Reflecting investment income in that situation would not change the indication, but could noticeably increase the workload, hence it is not worthy of discussion here. The following discussion assumes that reflecting the time value of money will make a difference in the calculation

¹⁵ FAS 60, paragraph 60c.

accounting rules.)¹⁶

Those arguing against reflecting the time value of money focus on what happens immediately after the currently unearned premium is earned. Under current (statutory and GAAP) accounting rules, future investment income is not booked immediately upon incurring a loss, unless losses are allowed to be discounted. Therefore, they argue, the premium deficiency reserve should forecast the accounting only as far forward as the earning of this premium, reflecting only the time value of money up till then and no further. This would include reflecting investment income through the period that the unearned premium becomes earned, and reflecting discounting only to the extent that the newly incurred losses can be discounted.

Those arguing for reflecting the time value of money focus on the eventual profitability or loss of in-force policies, given the premium charged. They see it as contradictory to require time value of money to be reflected in pricing, then to ignore it totally in the accounting (especially when gauging the "deficiency" of the premium). If the accounting requires a profitable policy to record an initial accounting loss before the eventual profit is recognized, they see this as a surplus allocation issue, and not something that justifies setting an additional reserve.

Assuming that the time value of money will be reflected in the calculation, which was true for both GAAP and statutory accounting rules¹⁷ as of the date of this paper, there are three decisions that need to be made in designing the calculation. They are:

- Discounting vs. Expected future investment income - Should you use discounted values, or project the expected investment income from the insurance flows?
- Unearned vs. In-force future flows - Should the deficiency calculation only look at the flows from the unearned portion of the policy, or should all the remaining flows from in-force policies be considered?
- Premium provided funds vs. accounting balance derived funds - When calculating the expected investment income, should one reflect the investment and runoff of only those funds provided through the premium, or should the calculation of invested "funds" be based on the corresponding liabilities set up in accounting records.

Discounting vs. Expected future investment income (Exhibit 1, sheet 1)

In the discounting approach, the future premium, loss, expense and other flows are discounted at an interest rate¹⁸. A premium deficiency exists if the present value of the net outflows is greater than the initial funds established to support these flows. There is no explicit calculation of investment income under this method.

Under the expected future investment income approach, the total funds available to invest are calculated, and this fund projected forward until the last item related to the policy is paid.

¹⁶ The 1984 AICPA Issues Paper mentioned earlier focused heavily on the issue of whether, and if so then how, to reflect the time value of money in the PDR calculation. But since that paper was never acted on by FASB, it is not authoritative guidance.

¹⁷ Effective January 1, 2001. As mentioned earlier, a PDR calculation was not required by statutory accounting prior to January 1, 2001.

¹⁸ Theoretically, discounting could be done using a yield curve and not a single rate. In practice, a single rate is more typically used. The selection of an appropriate discount or interest rate is discussed later in this section.

Investment income is calculated each year (or more frequently), based on the average fund balance and the interest rate. A premium deficiency exists if the sum of ultimate losses and expenses (and other such outflows, net of any inflows¹⁹) is greater than this initial fund plus investment income. In other words, a premium deficiency exists if the fund turns negative.

The size of the premium deficiency reserve under this second approach is the shortfall in the initial fund, i.e. the amount that, when added to the initial fund, would cause the combined funds plus investment income to meet the required cashflows with nothing left over. If the interest rate used in this "funds" approach is the same as the discount rate in the discounting approach, the two methods are equivalent (see Exhibit 1, sheet 1 for an example of the two methods).

The initial funds under these two approaches are generally defined to be the net liabilities for the PDR components (e.g., UPR, DAC, etc.) as of the balance sheet date. An alternative interpretation is discussed later, under the heading "Premium provided funds vs. accounting balance derived funds".

The 1984 AICPA paper on this subject would have set the premium deficiency reserve differently. It would have set the reserve equal to the value of the ending (negative) fund balance when the last outflow is paid, after modeling the flows in a manner similar to the expected future investment income approach mentioned above. As can be seen in Exhibit 1, sheet 2, this results in counter-intuitive answers if the payment pattern is extended. Normally, lengthening the expected claim payout, keeping everything else constant, would reduce the indicated price. Hence it should reduce any indicated premium deficiency reserve. The opposite would occur under the AICPA paper's recommendation, however. The fund would increase each year due to continual "borrowing" costs, until the final payment is made, at which point the "borrowing" is arbitrarily stopped. Due to this anomaly, I do not consider this to be a valid method.

Unearned vs. In-force future flows (Exhibit 1, sheet 3)

Some have argued that the premium deficiency reserve should be based on the (otherwise not reflected) deficiency in the total in-force premiums, not just the unexpired portion of these premiums. This approach would require including the runoff of existing loss reserves on the earned portion of in-force policies. An example of this method is given in Exhibit 1, sheet 3.

Under this approach, any deficiency in the previously earned portion of in-force policies has already been reflected, via the setting up of a loss reserve. As a result, this method should produce a lower PDR indication, due to the future investment income expected from the runoff of these (frequently undiscounted) already-established loss reserves.

Premium provided funds vs. accounting balance derived funds (Exhibit 1, sheet 4)

The 1984 AICPA paper raised the issue of exactly how the initial fund balance is determined under these methods. The previous exhibits (Exhibit 1, sheets 1 through 3) all assumed that the invested funds equal the balance sheet liabilities associated with the unexpired policies (less any related non-invested "insurance" assets, such as agents balances). The implicit assumption is that the balance sheet insurance liabilities (net of insurance assets) are automatically supported

¹⁹ For example, future premium collections or salvage/subrogation recoveries.

by invested assets, and that establishing such a liability results in an increased allocation of invested assets²⁰. This approach can be thought of as a "accounting balance derived funds" approach. *(The issue of which insurance assets to subtract from insurance liabilities is discussed in greater detail in footnote ²¹).*

An alternative approach (Exhibit 1, sheet 4) looks at only those funds provided by the in-force policy premiums, as if they were forever closed off from other company funds. The starting fund value for the PDR calculation would be based on

- total in-force policy collected premiums,
- less losses and expenses (including other underwriting expenses) paid-to-date,
- plus investment income to-date on those net funds.

Future profits would then be calculated, with future revenues coming from future earned premiums and investment income (from the runoff of these closed funds), and future expenses coming from losses & lae, policyholder dividends, amortization of DAC, and maintenance costs. If future profits are zero or positive, no premium deficiency reserve is indicated. If future profits are negative, the premium deficiency reserve equals the level at which the reserve, plus future investment income from this reserve, exactly offsets the negative profits.

(Note that this is the only method discussed so far that would reflect total underwriting expenses, rather than just unamortized acquisition costs and future maintenance costs. This method is also generally used only in conjunction with "in-force" flows rather than unearned flows, due to

²⁰ Note that this is an increased allocation, not an increased level. Increasing a company's liabilities in isolation does not generate an asset, but it may increase the proportion of total assets supporting liabilities, to the detriment of assets supporting surplus.

²¹ Some non-cash assets arising directly from the insurance transaction ("insurance" assets) clearly support insurance liabilities. A clear example of an insurance asset is agents balances. Other examples may include reinsurance recoverable on paid losses or deductible recoverable amounts on paid losses. Assuming that a company is solvent, the net of insurance liabilities less these insurance assets should equal the amount of supporting invested assets.

The cash flows from the runoff of these insurance liabilities and insurance assets must be projected for all the methods discussed, either to calculate their present value relative to the initial invested assets, or to project the future level of the invested asset "fund". For nearly all of these items, projecting these cash flows is a straightforward and logical exercise. But what is the cash flow runoff for DAC? Given that it does not generate any future cash flow (positive or negative), should it be included as an insurance asset in the calculation of supporting invested assets?

The examples in Exhibit 1, sheets 1-3 do treat any existing DAC asset as an insurance asset (reducing the total level of invested assets allocated to the unexpired policy), despite the fact that the DAC runoff generates no future cash flow. But given that DAC is not recognized for statutory accounting purposes, and statutory accounting rules frequently dictate required capital, risk-based capital and investment rules, it could be argued that the existence of DAC does not reduce the level of invested assets supporting the insurance liabilities. This would seem to imply that calculated invested assets should not be reduced by any DAC.

If invested assets are not reduced for DAC, then the earnings hurt resulting from DAC runoff needs to be reflected elsewhere, since the "accounting balance" method shown here reflects only cash outflows, and not asset "depreciation". This might be done by modifying the methods shown in Exhibit 1, sheets 1-3 to reflect the future earnings approach in Exhibit 1, sheet 4.

The approach used instead in this paper, to treat the DAC as a reduction to invested funds up-front, is simpler, and allows for ready equivalence of the expected investment income method to the discounting method. It is also the common approach, per the author's understanding. But the author acknowledges that other approaches may be justified.

problems with isolating the premium funds allocable only to unearned premiums and related costs.)

The author believes that the accounting balance approach better reflects the management of insurance company assets. Existing statutory laws and regulations (and the approaches both rating agencies and stock analysts use to evaluate a company's financial situation) pressure, if not force, a company to maintain adequate invested assets equal to statutory liabilities (net of related insurance assets). An increase in these liabilities can result in an increase in the investments an insurer attributes to support of liabilities (and a corresponding reduction in investments supporting surplus)²².

The statutory definition and GAAP definition for the premium deficiency reserve reference only the unearned premium reserve, not "in-force" policies, hence only the flows from the unearned premium will be used in subsequent exhibits. In addition, future exhibits will use the accounting balance approach, for reasons given previously.

c. Actual costs versus expected costs.

Reserves are set for a given evaluation date, but are generally not published or publicly reported until some later date, after some subsequent development has occurred. How much of this new information is to be used in the PDR calculation? Or to give an explicit example, how does the PDR calculation treat a catastrophe or other large loss that occurred between the evaluation date and the publication date?

The statutory definition of the premium deficiency reserve refers to "anticipated" losses and expenses. Likewise, the GAAP definition uses the term "expected" losses and expenses. The anticipated or expected amounts are those as of the balance sheet date. They should not reflect subsequent actual activity.

The premium deficiency reserve is meant to cover expected or anticipated premium deficiencies, not bad luck. A fire policy written for a house that burned down was not obviously underpriced, as it was not expected that that policy would suffer a total loss. Likewise, a group of property policies written in a coastal state were not necessarily underpriced simply because a 1 in 100 year storm hit that year. This actual experience is only reflected to the extent that it reflects conditions that should have been known at the balance sheet date.

²² The author is aware of several companies that segmented their investment portfolios into those supporting insurance liabilities and those supporting surplus. One version of the NAIC model investment law also contains a "reserve test" that would penalize an insurer that did not maintain invested assets of suitable quality greater than or equal to net insurance liabilities.

d) Line of business groupings and offsets (Exhibit 2)

At what line level of detail is the premium deficiency reserve to be calculated? By annual statement line? By company business line (however so defined by the company)? By state, by line? GAAP guidance (FAS 60, paragraph 32) says that:

"Insurance contracts shall be grouped consistent with the enterprise's manner of acquiring, servicing, and measuring the profitability of its insurance contracts to determine if a premium deficiency exists."

Statutory guidance (SSAP 53, paragraph 13) says essentially the same thing.

This wording is frequently interpreted under U.S. GAAP to mean the company's business line, i.e., the level of line detail at which the company reports its earnings. This could be Commercial Lines versus Personal Lines, Domestic business versus International business, or some other similar delineation used in the company's shareholder reporting.

It is less obvious what the words mean when applied to statutory accounting. Companies that file both GAAP and statutory statements would probably use the same line groupings for both, since the GAAP and statutory guidance is worded virtually identically²³. Companies that file only statutory statements will probably follow a similar approach, defining line based on how they manage the business, and not using the line of business structure found in the statutory annual statement.

Why does the level of line grouping matter? Because of different rules regarding offsets between groups versus within a group. The premium deficiency reserve can go no lower than zero for a particular group, hence a negative indicated reserve for one group does not (and can not) offset a positive indication in another group. Unlimited offsetting is allowed within a line grouping, but no offsetting is allowed outside the group. As a result, the finer the grouping used in the calculation, the higher the premium deficiency reserve.

e) GAAP versus Statutory accounting rule differences

The most obvious difference between GAAP and statutory calculations of the premium deficiency reserve is DAC. Statutory accounting does not recognize an asset for prepaid ("deferred") acquisition costs, hence the cost of amortizing this asset does not have to be recognized in the PDR calculation. This should decrease the incidence of non-zero PDR reserves under statutory accounting.

A less obvious GAAP vs. stat. difference is the level of legal entity aggregation. GAAP accounting is generally done on a consolidated entity basis, while statutory accounting is done on a legal entity basis. Therefore, a publicly owned insurance group with two business line segments and twenty insurance company legal entities would perform two PDR calculations for GAAP purposes, but up to forty²⁴ for statutory purposes. This could mean forty different runoff

²³ This was intentional (based on discussions with those involved with the process). The codifiers of statutory accounting were asked to minimize differences between the GAAP and statutory premium deficiency reserve requirements, and to a large extent this request was met.

²⁴ There would be less than 40 if some of the legal entities contain business from only one of the business segments.

loss ratio selections versus two, forty different expense assumptions versus two, up to forty different interest rate assumptions²⁵ versus two. (While all companies in a quota share pool may be expected to have the same loss or expense ratio, they all could have noticeably different investment results, as investment income is generally not quota shared.) Besides requiring more work, this more detailed approach would tend to increase the incidence of non-zero PDR reserves for statutory accounting versus GAAP.

Besides DAC, there are other balance sheet differences between GAAP and statutory accounting. For example, agents balances for statutory accounting reflect only those amounts less than 90 days overdue, due to statutory non-admitted asset rules. GAAP does not have a 90 day rule, but does allow for bad debt reserves, based on previous collection experience. These differences affect the current accounting, but not the eventual cash collection or payout. As such, such differences may affect the initial level of invested funds assumed (depending on whether and how an "accounting balance" approach is used), but they should not affect the projected cash runoff of the individual account balances.

Lastly, the GAAP guidance on premium deficiency reserves requires projection of related policyholder dividends. The statutory guidance does *not* require consideration of related policyholder dividends. To the extent that deficient premiums do not generate policyholder dividends, this is not an effective difference, but some casualty dividend plans can result in non-zero total dividends even when an overall premium deficiency exists²⁶.

f) Reinsurance (Exhibit 3)

The types of reinsurance programs a company has, combined with significant differences between the accounting for gross versus net business, can add subtle complications to the PDR calculation. Values that appear at first to be net of reinsurance may really be gross of at least some reinsurance. Assumptions valid for runoff of direct balances may not hold for net (of reinsurance) balances.

To illustrate this point, assume a company writes only annual policies, written evenly throughout the year. Also assume that they purchase pro rata reinsurance via a treaty effective January 1st of each year, with premium ceded monthly based on the monthly direct *earned* premiums²⁷. As can be seen in Exhibit 3, this would result in a ceded unearned premium reserve of zero, even

This could happen if the business segment breakdown was commercial vs. personal, and the legal entities wrote (on a net of reinsurance basis) either personal or commercial, but not both.

²⁵ Each legal entity has its own investment portfolio, hence there would need to be at least twenty different interest rate assumptions, versus possibly only one under the consolidated GAAP approach in the above example. Some companies maintain segmented investment portfolios for each major business segment. For these companies, the choice is clearly forty different interest rate assumptions versus two in the above example.

Another reason for possibly having a separate interest rate assumption for each line grouping is materially different cash flow patterns. The projection of anticipated future investment income for a long tail line may justify a different investment yield assumption than the same projection for a short tail line.

²⁶ This issue is discussed further in item 2d of this overall section.

²⁷ The problem mentioned in this paragraph does not exist if the cession is based on direct written premium, or if the full annual cession is estimated and booked up-front as written premium.

when direct unearned premiums are significant. In such a situation, the reported unearned premium reserve can significantly overstate the true runoff exposure, even when calendar period earned premiums and incurred losses appear reasonable and undistorted.

An opposite problem could possibly occur for facultative reinsurance, where the underlying direct policy is written on an installment basis and the direct premiums are only recorded when each installment is billed. In this situation, it may be possible for the full ceded written premium to be recorded up front, while much of the direct written premium is deferred. The resulting UPR is then more equivalent to a ceded UPR, than a theoretical net or direct UPR.

Reinsurance programs in place for the future calendar period may also distort loss and expense runoff patterns. Direct loss payment patterns may be significantly different from net patterns, particularly where significant levels of excess reinsurance cessions exist. Historic expense ratios reflect past reinsurance ceding commissions (including contingent ceding commissions), and may not be indicative of future ceding commission levels. The ceding commissions may also face a different runoff pattern than the gross commissions (as seen in Exhibit 3). Therefore it may sometimes be advisable to model the direct (or gross) versus ceded flows separately in determining the PDR.

2. Issues affecting individual components

a) Interest rate

The interest rate²⁸ used in reflecting the time value of money should reflect reasonable expectations of what will be achieved during the runoff period, and should not reflect conservatism or risk. Three possible choices for this rate are:

- the investment portfolio interest rate
- the new money rate
- the "newer" money rate.

To the extent that the current major cash inflows have already occurred, the selected interest rate should reflect the current investment portfolio, and the expected runoff thereof.

To the extent that additional cash inflows are expected during the runoff, either through new premium receipts or the maturing of invested assets, the new money rate should be reflected.

To the extent that asset / liability matching exists, it might be appropriate to reflect the assets already purchased from previous inflows of currently in-force policies. This would argue for the "newer" money rate, say the rate associated with recent investment purchases.

The "true" interest rate of the runoff is probably a combination of all three of these rates. In practice, the selected rate would probably reflect several simplifying assumptions, both due to the cost involved in being more precise and the relative benefit vis-à-vis the uncertainty in the other assumptions (principally the runoff loss ratio assumption).

²⁸ All these rates should be after investment expenses.

b) Premium issues

The biggest issues in projecting premium runoff (besides the reinsurance issues mentioned previously) are agents balances runoff, installment premiums and audit premiums.

Agents Balances (Exhibit 4, Sheet 1)

The runoff of agents balances is probably simpler when dealing with total in-force runoff, rather than unearned premium runoff. This is because the agents balances can support both loss reserves²⁹ and unearned premiums. Depending on premium collection and write-off patterns, a company may want to make the simplifying assumption that all agents balances support the unearned premium reserve. (See Exhibit 4, Sheet 2 for an example of how to calculate the portion supporting loss reserves, and the relatively small size in most cases.)

Agents balances first enter into the PDR calculation as a reduction of beginning invested assets³⁰. The runoff of these balances are then modeled, based on historic collection patterns. This runoff projection may require knowledge of the agents balances by billing system and billing method (e.g., installment versus single payment)³¹.

Installment premiums

For at least one line of business (Workers' Compensation), companies have the option under statutory codification of deferring the booking of premium (as written) until the premium is billed. When this happens, an estimate needs to be made of the amount of "hidden" premium resulting from future installments of in-force policies. Those additional amounts could be handled in the PDR calculation by increasing the beginning UPR and agents balances amounts. Care must be taken to adjust the corresponding expense amounts, however, as this booking practice may have resulted in a deferral of commission and tax payments.

There should also be an understanding of how commissions and taxes are handled for any other installments. Are the commissions paid separately, and up front? Are commissions paid as premium is collected? Are there separate installment plans in place, such as an option for either agent-collected installments versus directly billing the insured for any installments, with different commission treatment for each? Are there any finance or servicing charges that should be considered (that might be recorded as other income, but should still be considered in the PDR calculation)?

²⁹ From both in-force policies and expired policies, although the expired policy portion should be minor. Those balances that most support loss reserves are those relating to billed installments and audit premiums, plus accrued retro premium balances from retrospectively rated policies.

³⁰ Using the accounting balance method, beginning invested assets or funds equal the beginning reserves less beginning supporting non-invested insurance assets, like agents' balances.

³¹ It is also possible that the total runoff amount can be (predictably) greater or less than the beginning agents balances amount. This is most likely when the non-admitted or bad debt portion of this balance is arbitrarily determined, and not based on actual write-off experience. In most cases, the author would not expect this difference to be material.

Audit premiums³² (Exhibit 5)

Some lines of business generate material amounts of audit premium. Beginning in 2001, statutory accounting will require an estimation (and booking) of these amounts, under the label EBUB (Earned but Unbilled)³³. (GAAP currently provides for recognition of future audit premium.) There are several PDR complications raised by the EBUB "reserve".

First, companies will be given the option of booking these estimated future audits as written premium, or as an adjustment to earned premium. If booked as written, then this amount can be treated similarly to other agents balance amounts. The only exception is that a larger portion will be directly allocable to both the expired portion of in-force policies, and policies no longer in-force. Hence one or both of these pieces need to be excluded from the PDR calculation.

If companies book these amounts as an adjustment to earned premium, then this adjustment will show up as an adjustment to the unearned premium reserves used in determining earned premium. These unearned premium adjustments are re-classed to agents balances for balance sheet presentation. These adjustment amounts also reflect only the *earned* portion of future audit premiums. Hence their effect needs to be totally removed from the data, if running off only the unearned portion of in-force policies, and their location can be either agents balances or unearned premiums, depending on the data source used in the calculation.^{34 35}

For the "adjustment to earned premium" scenario, an estimate will have to be made as to future audit premium relating to the un-expired portion of in-force policies. This additional³⁶ amount can usually be added to both agents balances and unearned premiums for calculating the PDR, with additional adjustments to commissions and taxes. This is similar to how future unbooked installments can be treated, except that the timing of commission expenses may differ between the two³⁷.

c) Losses & loss adjustment expenses ("l&lae")

The major issues here are generally more straight-forward, and to some extent have already been discussed. They are the projection of future losses, and the impact of loss reserve discounting.

Projection of future losses.

As mentioned earlier, the PDR calculation is based on expected or anticipated future costs, not actual costs. It is also focused only on in-force policies, usually only on the unexpired portion of same. As such, recently reported loss ratios may not be relevant to the PDR calculation.

³² The following discussion, while focused on audit premiums for in-force and expired policies, generally also applies to accrued retrospective premiums.

³³ per SSAP 53.

³⁴ If running off all in-force policy flows, including the expired piece, then only the adjustment relative to expired policies needs to be removed.

³⁵ Besides an unearned premium adjustment, corresponding adjustments may also have been made to tax, commission, loss and other reserves, that may need to be considered (or removed) in the PDR calculation.

³⁶ Premium audits typically generate additional amounts, on average. Returns are possible, but as the insured has no incentive to overpay the initial premium, returns should be relatively small when they do happen.

³⁷ In addition, if premium audits apply to a line, some level of premium audit expense should also be expected.

If recently reported loss ratios are used, the impact of prior policy or accident years need to be removed (e.g., reserve movements during the year from prior policy or accident years), as well as the impact of large or unusual current year events, such as large catastrophes. Any distortion due to changing loss expense definitions or allocations may need to be adjusted for (such as when the NAIC introduced the terms Adjusting & Other and Defense and Cost Containment)³⁸. Lastly, any expected impact due to recent pricing, inflation or underwriting changes needs to be adjusted for. As a result, business plans or budgets may be a better source of loss ratios for the PDR calculation than historic financial statements.

Loss reserve discounting

The models shown in the attachments focus on cash flow runoff, with balance sheet values used only in establishing the initial invested fund. As such, the impact of loss reserve discounting on the PDR calculation is limited.

Where the beginning balance sheet value is discounted, the resulting runoff should reflect the ultimate, undiscounted amount.

If a time value of money approach is not to be used, then the accounting earnings over the remaining earning period of the policy are to be modeled. Those projected accounting earnings should still reflect the booking of discounted reserves (to the extent permitted by accounting rules and to the extent consistent with the company's accounting practices).

The development of l&lae payment patterns is an integral part of the PDR calculation. This paper will not say much on this topic, already very familiar to actuaries, except to say that the l&lae portion of the unearned premium reserve runoff will not look exactly like an accident year. It should have a slightly shorter tail than a typical accident year, due to an average loss date a few months earlier, but this difference is probably not material.

d) Policyholder dividends

The existing balance sheet values for policyholder dividends generally reflect only the earned portion of any in-force policies, and for statutory purposes, may reflect only expired policies³⁹. Hence, additional estimates may need to be made to reflect projected dividends from the unearned portion of in-force policies. In addition, a reduced level⁴⁰ of such dividends may be

³⁸ For example, the movement of an expense from one category to another may change how it is allocated to line and/or accident year. The year this change is made, the calendar year results by line and/or accident year may be significantly impacted, such that the calendar year results are not indicative of current in-force policy exposures.

³⁹ GAAP rules may result in a higher policyholder dividend reserve than statutory rules. Statutory rules generally only reflect this dividend liability after the dividends have been declared by the company's board of directors, which usually doesn't happen until after or around policy expiration. GAAP rules allow reflection sooner, as long as the recognition criteria under FAS 5 are met.

⁴⁰ Some may ask why any policyholder dividends are paid at all, given that premiums are deficient. The answer may be that, although the aggregate premiums are deficient, some policyholders included in the aggregate calculation may have qualified for a dividend, based on individual good experience. In addition, sometimes these dividends are paid due to the calibration of the dividend scales, which either purposely or inadvertently pay

expected from policies with "deficient premiums". (Note that the statutory definition of the PDR does not require consideration of these dividends.)

c) Acquisition costs

Acquisition costs typically include commissions (regular and contingent), premium based taxes, and policy underwriting and issuance costs. For GAAP purposes, payments made for these items that relate to unearned premiums may be set up as a deferred acquisition cost (DAC) asset. Companies may calculate this asset based only on commissions and taxes, and not all reported acquisition costs.

Two PDR issues associated with this item are reinsurance distortions and contingent commissions.

Reinsurance

Heavy use of treaty reinsurance can significantly distort historic commission levels, especially in relation to the unearned premium reserve. As mentioned earlier (under the Reinsurance section), some treaty reinsurance contracts result in ceded written premium booked monthly or quarterly, based on a factor times the reported subject earned premium. As such, the unearned premium reserve being run off may not reflect any of the future treaty cessions.

Most likely, the regular commission charge on direct business is substantially different from the ceded commission charge. The regular commissions due to existing unearned premium reserve may have also been charged off. Hence, future regular commission cash flows may be limited to ceding commissions, and the rate for these commissions may be significantly different than calendar year net commission rates. These problems can be handled by modeling the direct versus the ceded runoff. (See Exhibit 3 for an example of this situation.)

Contingent commissions

Contingent commissions generally have a longer "tail" than regular commissions. They may be incurred as premium is written (e.g., due to volume incentive plans) or as premium is earned (e.g. due to profit sharing plans), but they generally are not paid up-front. While there may be multiple contingent commission plans at work, with significantly different resulting cash flows, the impact relative to the total PDR calculation may be minor⁴¹. Hence it may make sense to ignore the various contingent plans in place and choose one simplifying assumption instead. (This may be less true for the contingent ceding commissions, which can be significant relative to net premium. Therefore these amounts may need to be separately modeled, when significant.)

dividends even when an aggregate net loss is projected.

⁴¹ For example, the total direct contingent commission may be only 1% to 2% of premium, with a payout that extends at most only a year or so. The impact of a more precise calculation of these flows is frequently overwhelmed by the uncertainty in the size and length of the loss flows.

f) Maintenance costs

Maintenance costs are defined in FAS 60 (Appendix A) as:

"Costs associated with maintaining records relating to insurance contracts and with the processing of premium collections and commissions"

The PDR calculation requires an estimate of runoff maintenance expenses. Note that any expenses assumed to be paid up-front, or around policy issuance time, are not to be included in the PDR calculation. In addition, general overhead costs are generally not included under this definition⁴². Therefore, the runoff maintenance costs, as a percentage of unearned premium reserves, are substantially smaller than total underwriting expenses less acquisition costs.

Estimates of the PDR based on general expense rates may substantially overstate the need for a PDR reserve. This is because general expense ratios are frequently in the 5 to 10% (of premium) range⁴³, while maintenance costs may be just a fraction of that amount. Therefore, PDR calculations that use the entire general expense ratio (with no allowance for up-front expenses) may overstate total runoff costs by 5 to 10% of premium.

g) Other (including FIT)

The above discussion dealt with essentially all the underwriting income (and investment income) components of unearned premium runoff. There may also be items related to other income that impact the runoff. The most likely item, i.e., service or finance charges associated with installment premiums, was mentioned earlier.

Federal income taxes are a different issue. The inclusion of taxes would have no impact on the calculation if:

- all the future income or loss modeled in the PDR calculation is taxable,
- there is no deferred tax asset or liability associated with the beginning balances modeled, and
- the indicated PDR is zero.

Generally speaking, taxes will only reduce the level of expected profit, and not turn a positive net profit into a loss. Therefore they can safely be ignored when the indicated premium deficiency reserve is zero.

The situation changes when the indicated PDR is positive. If all income is taxable, then the existence of taxes should theoretically reduce the premium deficiency reserve, to the extent that the resulting negative taxable income would result in cash recoveries from:

- prior year tax payments,
- positive indicated tax liability for other lines (with zero PDRs), or
- positive indicated tax liability for other affiliates in the overall corporate tax filing.⁴⁴

⁴² The author is aware of at least one auditing firm that explicitly states that general overhead costs do not belong in the calculation of maintenance costs. Only the marginal costs associated with the policy runoff are to be included. This would normally be expected to be a very small portion of the total unearned premium (1% or less?).

⁴³ Best's Aggregates & Averages, Property-Casualty, United States, 1999 edition, page 288.

⁴⁴ And a corporate-wide tax agreement exists that requires positive tax entities within the consolidation to pay "tax"

Given this dependence on prior year tax payments, the tax situation of other lines and possibly even the tax situation of affiliated companies, accurate reflection of income tax effects in PDR calculations may be problematic. This situation is made even more problematic when the impact of deferred tax assets (due to loss reserve discounting for tax purposes) is factored in⁴⁵

C. Suggested Multi-tier approach (with exit points)

As the above pages illustrate, a full, detailed PDR calculation can be very complicated and time-consuming. This process can be vastly simplified, however, by taking advantage of the reserve's floor of zero.

The PDR reserve for a particular grouping can never be lower than zero. Therefore, if conservative assumptions result in a negative PDR indication before applying the floor, more unbiased assumptions (which would indicate an even more negative PDR indication prior to applying the floor) will not change the final result. Hence, conservative assumptions can be used to produce an unbiased PDR estimate, as long as an indication of zero results.

For the following multi-tier approach, the calculation ends and all subsequent steps omitted as soon as a zero PDR indication results.

First tier - *Net combined ratios consistently and materially below 1.0, and stable*

The first step in the calculation should be a quick check to see if combined ratios (or combined ratios after removing previously expensed acquisition costs, such as commissions and taxes) are consistently and reliably below 1.0. If this is the case, then the calculation might be able to stop there.

Second tier - *unearned premium reserve runoff, no investment income*

The second step may be to estimate the runoff, using conservative values where desired for simplicity purposes, with no reflection for the time value of money. If the indication is for a PDR of zero, the calculation is over. This may be done at first with very conservative values, which are then selectively refined until a zero indication is achieved. (If desired, further refinement could be delayed until a later step.

Third tier - *unearned premium reserve runoff, solve for minimum interest rate*

The third step would be to calculate the runoff with reflection for investment income, solving for the interest rate at which the PDR equals zero. If this rate is clearly lower than the forecasted interest rate for the entity(ies) in question, then the calculation is over. (Note: This approach would greatly reduce the complexity of the calculation for a quota share pool under statutory accounting, where the underwriting results may be identical for the members of the pool but the

to the negative tax entities within the same consolidation. The author is aware of several of these agreements.

⁴⁵ Current federal income tax law also creates a difference in the timing of taxable income and reported (GAAP or statutory) income, due to the treatment of the unearned premium reserve. Only 80% of the unearned premium is allowed as a deduction, hence revenue is accelerated for tax purposes versus what statutory income would be.

investment portfolios and interest rates vary. Under this approach, only one calculation may be necessary for all the pool companies, as long as the all such companies clearly will surpass the minimum rate.⁴⁶⁾

Fourth tier (optional, may not always be allowable) - in-force runoff, solve for minimum interest rate

For those situations where an in-force runoff is allowed/desired, runoff of the remaining flows on in-force policies, including the expired portion of such policies, could be done as a next step. This may allow enough investment income to be reflected (due to the establishment of undiscounted or conservatively discounted loss reserves) to result in a zero PDR indication at a low interest rate.

Fifth tier. - gradually refine the material conservative assumptions to unbiased levels

The next step, if a positive PDR still results after the above, is to gradually refine the more material conservative assumptions to remove any bias to see if a zero PDR indication is achievable. If this is not possible, the next step must be taken.

Last tier - full analysis

The last step is to do a full detailed analysis, reflecting unbiased estimates for all material inputs. Separate interest rate projections will be necessary for each member of a quota share pool⁴⁷

Note that even if the procedure ended with step one, a company might want to disclose and view its method as encompassing the entire process, so as to not imply a change in method when subsequent steps are called for at a later date.

D. Data Sources - strengths/weaknesses

This section will look at the principal data sources available to those performing a PDR calculation, and evaluate their strengths and weaknesses for this application. Most of these should be familiar to actuaries, but two may be currently overlooked: runoffs used for asset/liability management and runoffs used by publicly owned companies to prepare SEC market risk disclosures.

Plan/Budget

Business plans or budgets are used by companies to forecast results for the coming period(s), and to aid in management for these periods.

Strengths

- Source of company "anticipated" losses, expenses for the projection period. Therefore they should reflect runoff only, with no impact (or readily identifiable impact) from prior

⁴⁶ When a company has business that is not quota-share pooled, then additional calculations may be necessary, and one calculation for the entire pool may not suffice.

⁴⁷ The only situation where this will not occur is when investment results are also part of the quota share agreement. The author is not aware of any company or group where this is the case.

- year reserving actions. Should also reflect premium levels of unexpired policies.
- Probably in detail consistent with "grouping" required by the calculation.
- Readily available, even in advance of balance sheet date.
- Readily understood by management (and may arguably already reflect management's "best estimate").

Weaknesses:

- May be biased, unreliable for those companies most likely to have positive premium deficiency reserves. As such, it's reliability should probably be tested before use.
- May reflect future business to be written in the coming year, not just in-force business.
- Unlikely to be audited.
- May not fully reconcile to financial statements.
- Generally does not contain cash flow information, or sufficient information to perform a cash flow runoff calculation.
- May not contain needed legal entity investment data.

Statutory annual statement, Insurance Expense Exhibit

Statutory annual statements, associated schedules and supplements, and the Insurance expense exhibit are produced on a regular basis by *all* U.S. domiciled insurance companies. These statements are also highly detailed, when compared to the corresponding GAAP statements.

Strengths

- Audited, at least as to items material to the entire (legal) entity.
- Complete. They include all business of the company.
- Readily available.
- Frequently well understood by actuaries.
- Large amount of detailed data.
- Source of legal entity investment results and investment portfolio data.

Weaknesses

- May be distorted due to one-time events and redefinitions / reallocations, such as catastrophes, changing definitions of loss expense categories, expenses associated with a major corporate restructuring, commencement or cancellation of major reinsurance programs, etc.
- Calendar year components may be distorted due to prior year reserve actions, such as mass tort reserve strengthening.
- Historical, not forward looking. As such, may reflect past profitability and not in-force runoff profitability.
- Calendar year expense levels may not be indicative of runoff expense levels.
- May not be detailed enough for required grouping. For example, some annual statement lines may contain elements of multiple groups (e.g. other liability could include both commercial general liability policies and personal umbrella policies).
- May not contain adequate cash flow runoff data.
- May not be available on a timely basis. Most detailed information is produced only annually, with the information available internally not long before external publication of

the PDR is required.

Internal Management reports -actuals

Many companies maintain an additional reporting system, for internal management purposes. Reports from these systems are frequently used to compare actual experience to budgets/plans, and to evaluate where management action is necessary.

Strengths

- In detail consistent with "grouping" required by the calculation.
- Many such systems reconcile with the accounting ledger. (This is a weakness, when such system does not reconcile.)
- Support systems frequently have the desired cash flow information.
- Typically subject to internal audit, since management relies on such data for its decision making.
- Normally available on a timely basis.
- Readily understood by management.

Weaknesses (most of these are very similar to the Annual Statement weaknesses, as both are predominately calendar year data sources):

- May be distorted due to one-time events and redefinitions / reallocations, although these distortions may be explained and quantified somewhere in the information flow.
- May be distorted due to prior year reserve actions, such as mass tort reserve strengthening (although, once again, identification and explanation of these distortions may be available).
- Historical, not forward looking. As such, may reflect past profitability and not in-force runoff profitability.
- Calendar year expense levels may not be indicative of runoff expense levels.
- May be biased and/or unreliable for those companies most likely to have positive premium deficiency reserves. As such, its relative bias and reliability should probably be tested before use.

Asset / Liability management information

Companies that practice asset / liability management usually have a process to update and analyze the runoff of existing insurance balances. The underlying data and analysis could be used as a PDR data source.

Strengths

- May match up well with required grouping, if investment funds are similarly segregated.
- Readily available source of (frequently hard-to-get) runoff cash flow assumptions.
- Forward looking.
- No or minimal distortion due to one-time events or reallocations / redefinitions. Where these do exist, they are likely to be separately identified and explained.

Weaknesses

- May not be complete. May only be done for a portion of the business.
- Unaudited.
- May not be updated on a timely basis.
- Runoff of unearned premium flows may not be a point of focus. As such, the unearned runoff may not be reliable due to greater emphasis on the more material expired runoff. (This situation can vary drastically by company. For some companies, the unearned runoff may be more material than the expired runoff.)

Market risk disclosure workpapers

Starting in 1997, the Securities Exchange Commission (SEC) has required companies fitting a certain description (including many insurers) to disclose their exposure to various market risks, including interest rate risk⁴⁸. The workpapers underlying these disclosures may be a valuable resource for the PDR calculation, in those cases where the company chose to analyze these risks relative to their insurance liabilities⁴⁹.

Strengths.

- Source of valuable cash flow runoff information, including unearned premium runoff.
- More likely to be audited or controlled, due to its use in a public disclosure.
- Generally available timely, as quarterly disclosure is required if material changes occur.
- May be available in required "group" detail.
- Expertise and resources required to do these calculations mirror closely those required for PDR calculation.

Weaknesses

- May not be available for companies not subject to the SEC disclosure requirement.
- Not required to be done by legal entity. As such, the workpapers may not be adequate for a legal entity calculation. (This should be less of a problem for quota share pool companies).
- Runoff of unearned premium flows may not be a point of focus. As such, the unearned runoff may not be reliable, due to greater emphasis on the more material expired runoff. (This situation can vary drastically by company. For some companies, the unearned runoff may be more material than the expired runoff.)
- May not be complete, as could exclude some portions considered not material for GAAP consolidated reporting of these risks.

⁴⁸ This requirement is titled SEC Release #33-7386, "DISCLOSURE OF ACCOUNTING POLICIES FOR DERIVATIVE FINANCIAL INSTRUMENTS AND DERIVATIVE COMMODITY INSTRUMENTS AND DISCLOSURE OF QUANTITATIVE AND QUALITATIVE INFORMATION ABOUT MARKET RISK INHERENT IN DERIVATIVE FINANCIAL INSTRUMENTS, OTHER FINANCIAL INSTRUMENTS, AND DERIVATIVE COMMODITY INSTRUMENTS".

⁴⁹ The expansion of this analysis to insurance liabilities is not currently required, but companies may do so voluntarily, and public disclosures have revealed that some companies are doing so.

E. Findings and conclusions

The Premium Deficiency Reserve calculation is not currently an issue for non-publicly owned U.S. property/casualty insurance companies, and is done on a highly summarized (i.e., consolidated) basis for those companies that are subject to it. This will change with the implementation of new statutory accounting rules in 2001. All U.S. domiciled property/casualty insurers⁵⁰ will now be required to perform these calculations on a legal entity basis, greatly increasing the numbers of people involved in their calculation.

While a full analysis and calculation of these amounts can become very complex and time-consuming, a multi-tiered approach can be implemented that greatly reduces the work required in most circumstances. The restriction of refinements to only those that are material can also significantly reduce the workload.

The differences between the statutory and GAAP calculations are material, and could cause either one to be the higher of the two. Separate calculations by legal entity can cause a higher statutory PDR, relative to the consolidated GAAP calculation, while the impact of the DAC (deferred acquisition cost) asset can cause the GAAP result to be the higher of the two. In general, the more expenses are deferred and the more finely detailed the calculation, the more likely the PDR will be non-zero.

⁵⁰ Codification rules make this a requirement, under SSAP 53. States still have to implement codification for these rules to be effective. As of now, nearly all (if not all) states are expected to adopt codification by January 1, 2001. States are allowed to permit or prescribe differences from codification rules for their domiciled insurers, but the current proposal is to require disclosure of these differences.

Assumptions

1. No cash removed by owners until last claim paid
2. Initial fund balance equals unearned premium reserve less unamortized acquisition costs
3. All payments made mid-year

Source:

(f) = prior year's value for (j)

$$(g) = (f) - (b) - (c) - (d) - (e)$$

$$(h) = 0.5 \times [(f) + (g)]$$

$$(ii) = (h) \times [\text{interest rate shown above}]$$

$$(j) = (g) + (i)$$

$(k) = \text{for present value row: } (a) - (b) - (c) - (d) - (e)$

for valuation date row: an estimate (solved for iteratively, or from present value calculation).

for future year rows: $(1 + \text{interest rate}) \times (\text{prior year value for column (k)})$

Premium Deficiency Reserves
Time Value of Money
Problem with AICPA Issue Paper method

Year	Unearned premiums (a)	Expected L&LAE (b)	Expected policyholder dividends (c)	Unamortized acquisition costs (d)	Maint costs (e)	Fund balance begin (f)	Fund balance end (g)	avg (h)	Inv. inc. 5% (i)	Ending fund inv. inc. (j)	Premium Deficiency Reserve (k)
ultimate	100	100	5	20	5						

Previous example											
present value	100	92.1	4.9	20.0	4.9						21.9
<i>balances</i>											
valuation date	100	0	0	20	0		80.0			80.0	21.9
<i>cash</i>											
1	0	30	5	0	5	80.0	40.0	60.0	3.0	43.0	23.0
2	0	30	0	0	0	43.0	13.0	28.0	1.4	14.4	24.1
3	0	30	0	0	0	14.4	-15.6	-0.6	0.0	-15.6	25.4
4	0	10	0	0	0	-15.6	-25.6	-20.6	-1.0	-26.7	26.6

Slow pay example											
present value	100	92.0	4.9	20.0	4.9						21.8
<i>balances</i>											
valuation date	100	0	0	20	0		80.0			80.0	21.8
<i>cash</i>											
1	0	30	5	0	5	80.0	40.0	60.0	3.0	43.0	22.9
2	0	30	0	0	0	43.0	13.0	28.0	1.4	14.4	24.0
3	0	30	0	0	0	14.4	-15.6	-0.6	0.0	-15.6	25.2
4	0	9	0	0	0	-15.6	-24.6	-20.1	-1.0	-25.6	26.5
5	0	0	0	0	0	-25.6	-25.6	-25.6	-1.3	-26.9	27.8
6	0	0	0	0	0	-26.9	-26.9	-26.9	-1.3	-28.3	29.2
7	0	0	0	0	0	-28.3	-28.3	-28.3	-1.4	-29.7	30.7
8	0	1	0	0	0	-29.7	-30.7	-30.2	-1.5	-32.2	32.2

AICPA Issue Paper answers

Year	Unearned premiums	Expected L&LAE	Expected policyholder dividends	Unamortized acquisition costs	Maint. costs	Fund balance begin	Fund balance end	avg inc. 5%	Inv. inc. @ 5%	Ending inv. after fund inc.	Premium Deficiency Reserve
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)

unexpired portion				
balances				
valuation date	100	0	0	20
cash				
1	0	30	5	0
2	0	30	0	0
3	0	30	0	0
4	0	10	0	0

expired portion	balances	valuation date					
			cash				
	0	70		5	0	0	0
	0	30		5	0	0	0
	0	30		0	0	0	0
	0	10		0	0	0	0
	0	0		0	0	0	0
	0	0		0	0	0	0

Note: these flows assume the same patterns apply to the expired portion and the unexpired portion of the in-force policies, except for dividends (which are paid at total policy expiration). This is an approximation.

[illegible]

Premium Deficiency Reserves
Time Value of Money
Premium provided funds method

Year	Unearned Premiums	Expected L&LAE	Expected policyholder dividends	Unamortized acquisition costs	Maint costs	Fund balance begin	Fund balance end	Inv. inc. @ 5% avg	Ending fund after inv. inc.	Premium Deficiency Reserve
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)

ultimate (at inception) remaining

unexpired portion

expired portion

unexpired portion

balances

valuation date

cash

1

2

3

4

expired portion

balances

valuation date

cash

1

2

3

4

Assume underwriting expenses are 30%, and all are paid up-front except for maintenance costs.

In-force total

calculation of initial fund balance

Premium received	Loss&lae paid	Dividends paid	Underwriting expenses paid	backed into so as to produce a value of zero, below
200	30	0	55	0.0
initial year				117.9
				2.9
				57.5
				117.9
				24.4

subsequent cash flows

1	0	60	10	0	5	117.9	42.9	80.4	4.0	46.9	25.6
2	0	60	0	0	0	46.9	-13.1	16.9	0.8	-12.3	26.9
3	0	40	0	0	0	-12.3	-52.3	-32.3	-1.6	-53.9	28.2
4	0	10	0	0	0	-53.9	-63.9	-58.9	-2.9	-66.8	29.7

Future earnings

premium loss&lae policyholder unamortized maint.

100 100 5 20 5

premium funds

PDR

Total

inv. inc. profit

0.3 -29.7

5.3 29.7

0.0

Premium Deficiency Reserves
Line of Business groupings and offsets

Exhibit 2

Year	Unearned Premiums	Expected L&LAE	Expected policyholder dividends	Unamortized acquisition costs	Mainl. costs	Fund balance begin	end	avg	Inv. inc. @ 5%	Ending fund after inv. inc.	Premium Deficiency Reserve
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Line A											
ultimate	100	100	5	20	5						
present value	100	92.1	4.8795	20.0	4.9						21.9
											present value method →
											expected investment income method →
balances											
valuation date	100	0	0	20	0		80.0			80.0	21.9
cash											
1	0	30	5	0	5	80.0	40.0	60.0	3.0	43.0	23.0
2	0	30	0	0	0	43.0	13.0	28.0	1.4	14.4	24.1
3	0	30	0	0	0	14.4	-15.6	-0.6	0.0	-15.6	25.4
4	0	10	0	0	0	-15.6	-25.6	-20.6	-1.0	-26.7	26.6
Line B											
ultimate	100	60	5	20	5						
present value	100	55.3	4.8795	20.0	4.9						0.0
											present value method →
											expected investment income method →
balances											
valuation date	100	0	0	20	0		80.0			80.0	0.0
cash											
1	0	18	5	0	5	80.0	52.0	66.0	3.3	55.3	0.0
2	0	18	0	0	0	55.3	37.3	46.3	2.3	39.6	0.0
3	0	18	0	0	0	39.6	21.6	30.6	1.5	23.1	0.0
4	0	6	0	0	0	23.1	17.1	20.1	1.0	18.2	0.0
Line A + B											
ultimate	200	160	10	40	10						
present value	200	147.4	9.7590	40.0	9.8						7.0
											present value method →
											expected investment income method →
balances											
valuation date	200	0	0	40	0		160.0			160.0	7.0
cash											
1	0	48	10	0	10	160.0	92.0	126.0	6.3	98.3	7.3
2	0	48	0	0	0	98.3	50.3	74.3	3.7	54.0	7.7
3	0	48	0	0	0	54.0	6.0	30.0	1.5	7.5	8.0
4	0	16	0	0	0	7.5	-8.5	-0.5	0.0	-8.5	8.4

Line A 21.9
Line B 0.0
Total 21.9

Line A + B

7.0

Note the difference in combined calculation versus individual calculation

Reinsurance impacts (on select PDR calculation inputs) when ceded written premium is based on direct earned premium

Premium Deficiency Reserves

	Yr 1999 policies		Yr 2000 policies		Yr 2001 policies		Total	
	CY 1999	CY 2000	CY 2000	CY 2001	CY 2001	CY 2002	CY 2000	CY 2001

Direct								
Written	100		100		100		100	100
Earned	50	50	50	50	50	50	100	100
UPR - ending	50	0	50	0	50	0	50	50
Commissions	20	20	20		20		20	20

Ceded								
Written	-20	-20	-20	-20	-20	-20	-40	-40
Earned	-20	-20	-20	-20	-20	-20	-40	-40
UPR - ending	0	0	0	0	0	0	0	0
Commissions	-6	-6	-6	-6	-6	-6	-12	-12

Net								
Written	80	-20	80	-20	80	-20	60	60
Earned	30	30	30	30	30	30	60	60
UPR - ending	50	0	50	0	50	0	50	50
Commissions	14	-6	14	-6	14	-6	8	8
commission rate	17.5%	30.0%	17.5%	30.0%	17.5%	30.0%	13.3%	13.3%

Assume 40% cession rate, based (and booked) on direct earned premium

20% direct commissions

30% ceding commissions

July 1 direct policies.

Steady volume.

Note:

1. How the UPR differs from the eventual runoff earned premium.
2. How different the runoff commission rate is from the CY rate.
3. How the runoff WP is negative.

Assumptions

1. No cash removed by owners until last claim paid
2. Initial fund balance equals unearned premium reserve less agents balances less unamortized acquisition costs
3. All payments made mid-year
4. 90% of agents balances received in the next period, with the remainder received the following period.

Source:

(g) = prior year's value for (k)
 (h) = (g) + (b) - (c) - (d) - (e) - (f)
 (i) = $0.5 \times [(g) + (h)]$
 (j) = (i) \times [interest rate shown above]
 (k) = (h) + (j)
 (l) = for present value row: (a) - (undiscounted b) + (discounted b) - (c) - (d) - (e) - (f)
 for valuation date row: an estimate (solved for iteratively, or from present value calculation).
 for future year rows: $(1 + \text{interest rate}) \times (\text{prior year value for column (k)})$

Premium Deficiency Reserves
Agents Balances
Portion supporting loss reserves

50% weight													
Up front billing													
Month	Collection			Agents Bal. supporting:			P.V.			Even monthly installments			
	pattern	Cumulative	earned	loss res.	UPR	Total	factor	Weight		pattern	Cumulative	earned	loss res.
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
0	50%	0%	0%	50%	50%	99.59%	4.2%	4%	0%	0.0%	95.8%	96%	99.59%
1	30%	8%	2%	18%	20%	99.70%	4.2%	7%	8%	1.7%	87.5%	89%	99.62%
2	15%	17%	1%	4%	5%	99.80%	4.2%	8%	17%	2.1%	79.2%	81%	99.64%
3	5%	25%	0%	0%	0%	100.00%	4.2%	8%	25%	2.1%	70.8%	73%	99.64%
4	0%	33%	0%	0%	0%	100.00%	4.2%	8%	33%	2.1%	62.5%	65%	99.64%
5	0%	42%	0%	0%	0%	100.00%	4.2%	8%	42%	2.1%	54.2%	56%	99.64%
6	0%	50%	0%	0%	0%	100.00%	4.2%	8%	50%	2.1%	45.8%	48%	99.64%
7	0%	58%	0%	0%	0%	100.00%	4.2%	8%	58%	2.1%	37.5%	40%	99.64%
8	0%	67%	0%	0%	0%	100.00%	4.2%	8%	67%	2.1%	29.2%	31%	99.64%
9	0%	75%	0%	0%	0%	100.00%	4.2%	8%	75%	2.1%	20.8%	23%	99.64%
10	0%	83%	0%	0%	0%	100.00%	4.2%	8%	83%	2.1%	12.5%	15%	99.64%
11	0%	92%	0%	0%	0%	100.00%	4.2%	8%	92%	2.1%	4.2%	6%	99.64%
12	0%	100%	0%	0%	0%	100.00%	4.2%	4%	100%	2.1%	0.0%	2%	99.72%
13							4.2%	2%		0.4%		0.4%	99.80%
14	100%						4.2%	100%		0.0%		0.0%	100.00%

Weighted total (1.0 = annual WP) 0.001 0.030 0.031 0.010 0.250 0.260 installments
 Assume: Policies start on first day of month
 Even spread of writings by month (signified by weights in columns (h) and (o)).
 Installments billed monthly, collected in same pattern as up-front, once billed, but agents balance for full annual amount set up at time zero.
 Agents Balances present value factor based on amounts billed to-date.
 Annual interest rate 5.0%
 Monthly interest rate 0.4%

Formula for certain columns:
 $(d) = (f) \times (c)$, or the amount of agents balances supporting loss reserves equals total agents balances times the portion of policy premium earned to-date.
 $(k) =$ any amounts not yet collected from previous months' billings. In this example, this equals $20\% / 12 + 5\% / 12$.
 Note: prior months' installment billings are 100% earned in this example

Premium Deficiency Reserves
Estimated future audit premiums

Policy Month	Premium volume		Portion earned @12/31/00	Total audit		Earned portion of audit		Unearned portion of audit	
	initially booked	including audit		% of initial booked	% of ultimate booked	% of initial booked	% of ultimate booked	% of initial booked	% of ultimate booked
Jul-99	100.0	110.0	100.0%	10.0%	9.1%	10.0%	9.1%	0.0%	0.0%
Aug-99	100.0	110.0	100.0%	10.0%	9.1%	10.0%	9.1%	0.0%	0.0%
Sep-99	100.0	110.0	100.0%	10.0%	9.1%	10.0%	9.1%	0.0%	0.0%
Oct-99	100.0	110.0	100.0%	10.0%	9.1%	10.0%	9.1%	0.0%	0.0%
Nov-99	100.0	110.0	100.0%	10.0%	9.1%	10.0%	9.1%	0.0%	0.0%
Dec-99	100.0	110.0	100.0%	10.0%	9.1%	10.0%	9.1%	0.0%	0.0%
Jan-00	105.0	115.5	100.0%	10.0%	9.1%	10.0%	9.1%	0.0%	0.0%
Feb-00	105.0	115.5	91.7%	10.0%	9.1%	10.0%	9.1%	0.0%	0.0%
Mar-00	105.0	115.5	83.3%	10.0%	9.1%	9.2%	8.3%	0.8%	0.8%
Apr-00	105.0	115.5	75.0%	10.0%	9.1%	8.3%	7.6%	1.7%	1.5%
May-00	105.0	115.5	66.7%	10.0%	9.1%	7.5%	6.8%	2.5%	2.3%
Jun-00	105.0	115.5	58.3%	10.0%	9.1%	6.7%	6.1%	3.3%	3.0%
Jul-00	105.0	115.5	50.0%	10.0%	9.1%	5.8%	5.3%	4.2%	3.8%
Aug-00	105.0	115.5	41.7%	10.0%	9.1%	5.0%	4.5%	5.0%	4.5%
Sep-00	105.0	115.5	33.3%	10.0%	9.1%	4.2%	3.8%	5.8%	5.3%
Oct-00	105.0	115.5	25.0%	10.0%	9.1%	3.3%	3.0%	6.7%	6.1%
Nov-00	105.0	115.5	16.7%	10.0%	9.1%	2.5%	2.3%	7.5%	6.8%
Dec-00	105.0	115.5	8.3%	10.0%	9.1%	1.7%	1.5%	8.3%	7.6%
				10.0%	9.1%	0.8%	0.8%	9.2%	8.3%

Unbilled audit premium at 12/31/00 from:

In-force policies at 12/31/00

All policies written through 12/31/00

126.0

186.0

68.3

128.3

57.8

57.8

Audit premium adjustment if booked as adjustment to written.

Audit premium adjustment if booked as adjustment to earned.

Required adjustment to PDR calculation if only earned portion of audit was booked in financials.

Assume:

1. All policies are written at the start of the month.
2. Audits are billed exactly 6 months after expiration.
3. All policies are effective for 1 year.

Statement of Financial Accounting Standards No. 60

Accounting and Reporting by
Insurance Enterprises

June 1982



Financial Accounting Standards Board
of the Financial Accounting Foundation
HIGH RIDGE PARK, STAMFORD, CONNECTICUT 06905

Statement of Financial Accounting Standards No. 60

Accounting and Reporting by Insurance Enterprises

June 1982

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Statement of Financial Accounting Standards No. 60

Accounting and Reporting by Insurance Enterprises

June 1982

INTRODUCTION

1. The primary purpose of insurance is to provide economic protection from identified risks occurring or discovered within a specified period. Some types of risks insured include death, disability, property damage, injury to others, and business interruption. Insurance transactions may be characterized generally by the following:

- a. The purchaser of an insurance contract makes an initial payment or deposit to the insurance enterprise in advance of the possible occurrence or discovery of an insured event.
- b. When the insurance contract is made, the insurance enterprise ordinarily does not know if, how much, or when amounts will be paid under the contract.

2. Two methods of premium revenue and contract liability recognition for insurance contracts have developed, which are referred to as short-duration and long-duration contract accounting in this Statement. Generally, the two methods reflect the nature of the insurance enterprise's obligations and policyholder rights under the provisions of the contract.

3. Premiums from short-duration insurance contracts, such as most property and liability insurance contracts, are intended to cover expected **claim**¹ costs resulting from insured events that occur during a fixed period of short duration. The insurance enterprise ordinarily has the ability to cancel the contract or to revise the premium at the beginning of each contract period to cover future insured events. Therefore, premiums from short-duration contracts ordinarily are earned and recognized as revenue evenly as insurance protection is provided.

¹Terms defined in the glossary (Appendix A) are in **boldface type** the first time they appear in this Statement.

4. Premiums from long-duration insurance contracts, including many life insurance contracts, generally are level even though the expected policy benefits and services do not occur evenly over the periods of the contracts. Functions and services provided by the insurer include insurance protection, sales, premium collection, claim payment, investment, and other services. Because no single function or service is predominant over the periods of most types of long-duration contracts, premiums are recognized as revenue over the premium-paying periods of the contracts when due from policyholders. Premium revenue from long-duration contracts generally exceeds expected policy benefits in the early years of the contracts and it is necessary to accrue, as premium revenue is recognized, a liability for costs that are expected to be paid in the later years of the contracts. Accordingly, a liability for expected costs relating to most types of long-duration contracts is accrued over the current and expected renewal periods of the contracts.

5. Title insurance contracts provide protection for an extended period and therefore are considered long-duration contracts. Premiums from title insurance contracts ordinarily are recognized as revenue on the effective date of the contract because most of the services associated with the contract have been rendered by that time. Estimated claim costs are recognized when premium revenue is recognized because the insurance provides protection against claims caused by problems with title to real estate arising out of ascertainable insured events that generally exist at that time.

APPLICABILITY AND SCOPE

6. This Statement establishes accounting and reporting standards for the general-purpose financial statements of stock **life insurance enterprises, property and liability insurance enterprises,²** and **title insurance enterprises.** Except

²Property and liability insurance enterprises, for purposes of this Statement, include stock enterprises, mutual enterprises, and **reciprocal or interinsurance exchanges.**

for the sections on premium revenue and claim cost recognition and **acquisition costs** (paragraphs 9-11, 13-18, and 20-31), this Statement applies to **mortgage guaranty insurance enterprises**. It does not apply to mutual life insurance enterprises, **assessment enterprises**, or **fraternal benefit societies**.

STANDARDS OF FINANCIAL ACCOUNTING AND REPORTING

General Principles

7. Insurance contracts, for purposes of this Statement, shall be classified as short-duration or long-duration contracts depending on whether the contracts are expected to remain in force³ for an extended period. The factors that shall be considered in determining whether a particular contract can be expected to remain in force for an extended period are:

- a. *Short-duration contract.* The contract provides insurance protection for a fixed period of short duration and enables the insurer to cancel the contract or to adjust the provisions of the contract at the end of any contract period, such as adjusting the amount of premiums charged or coverage provided.
- b. *Long-duration contract.* The contract generally is not subject to unilateral changes in its provisions, such as a non-cancelable or guaranteed renewable contract, and requires the performance of various functions and services (including insurance protection) for an extended period.

8. Examples of short-duration contracts include most property and liability insurance contracts and certain **term life insurance** contracts, such as **credit life insurance**. Examples of long-duration contracts include **whole-life contracts**, **guaranteed renewable term life contracts**, **endowment contracts**, **annuity contracts**, and title insurance contracts. Accident

³*In force* refers to the period of coverage, that is, the period during which the occurrence of insured events can result in liabilities of the insurance enterprise.

and health insurance contracts may be short-duration or long-duration depending on whether the contracts are expected to remain in force for an extended period. For example, individual and **group insurance** contracts that are noncancelable or guaranteed renewable (renewable at the option of the insured), or collectively renewable (individual contracts within a group are not cancelable), ordinarily are long-duration contracts.

9. Premiums from short-duration insurance contracts ordinarily shall be recognized as revenue over the period of the contract in proportion to the amount of insurance protection provided. A **liability for unpaid claims** (including estimates of costs for claims relating to insured events that have occurred but have not been reported to the insurer) and a **liability for claim adjustment expenses** shall be accrued when insured events occur.

10. Premiums from long-duration contracts shall be recognized as revenue when due from policyholders. A liability for expected costs relating to most types of long-duration contracts shall be accrued over the current and expected renewal periods of the contracts. The present value of estimated future policy benefits to be paid to or on behalf of policyholders less the present value of estimated future **net premiums** to be collected from policyholders (**liability for future policy benefits**) shall be accrued when premium revenue is recognized. Those estimates shall be based on assumptions, such as estimates of expected investment yields, **mortality, morbidity, terminations**, and expenses, applicable at the time the insurance contracts are made. In addition, liabilities for unpaid claims and claim adjustment expenses shall be accrued when insured events occur.

11. Costs that vary with and are primarily related to the acquisition of insurance contracts (acquisition costs) shall be capitalized and charged to expense in proportion to premium revenue recognized. Other costs incurred during the period, such as those relating to investments, general administration, and policy **maintenance**, shall be charged to expense as incurred.

12. Accounting for investments by insurance enterprises presumes that (a) insurance enterprises have both the ability and the intent to hold long-term investments, such as bonds, mortgage loans, and redeemable preferred stocks, to maturity and (b) there is no decline in the market value of the investments other than a temporary decline. Accordingly, bonds, mortgage loans, and redeemable preferred stocks shall be reported at amortized cost. Common and nonredeemable preferred stocks shall be reported at market, and real estate shall be reported at depreciated cost.

Premium Revenue Recognition

Short-Duration Contracts

13. Premiums from short-duration contracts ordinarily shall be recognized as revenue over the period of the contract in proportion to the amount of insurance protection provided. For those few types of contracts for which the period of risk differs significantly from the contract period, premiums shall be recognized as revenue over the period of risk in proportion to the amount of insurance protection provided. That generally results in premiums being recognized as revenue evenly over the contract period (or the period of risk, if different), except for those few cases in which the amount of insurance protection declines according to a predetermined schedule.

14. If premiums are subject to adjustment (for example, retrospectively rated or other experience-rated insurance contracts for which the premium is determined after the period of the contract based on claim experience or reporting-form contracts for which the premium is adjusted after the period of the contract based on the value of insured property), premium revenue shall be recognized as follows:

- a. If, as is usually the case, the ultimate premium is reasonably estimable, the estimated ultimate premium shall be recognized as revenue over the period of the contract. The estimated ultimate premium shall be revised to reflect current experience.
- b. If the ultimate premium cannot be reasonably estimated,

the **cost recovery method** or the **deposit method** may be used until the ultimate premium becomes reasonably estimable.

Long-Duration Contracts

15. Premiums from long-duration contracts, such as whole-life contracts (including limited-payment and single-premium life contracts), guaranteed renewable term life contracts, endowment contracts, annuity contracts, and title insurance contracts, shall be recognized as revenue when due from policyholders.

16. Premiums from title insurance contracts shall be considered due from policyholders and, accordingly, recognized as revenue on the effective date of the insurance contract. However, the binder date (the date a commitment to issue a policy is given) is appropriate if the insurance enterprise is legally or contractually entitled to the premium on the binder date. If reasonably estimable, premium revenue and costs relating to title insurance contracts issued by agents shall be recognized when the agents are legally or contractually entitled to the premiums, using estimates based on past experience and other sources. If not reasonably estimable, premium revenue and costs shall be recognized when agents report the issuance of title insurance contracts.

Claim Cost Recognition

17. A liability for unpaid claim costs relating to insurance contracts other than title insurance contracts, including estimates of costs relating to **incurred but not reported claims**, shall be accrued when insured events occur. A liability for estimated claim costs relating to title insurance contracts, including estimates of costs relating to incurred but not reported claims, shall be accrued when title insurance premiums are recognized as revenue (paragraphs 15 and 16).

18. The liability for unpaid claims shall be based on the estimated ultimate cost of settling the claims (including the effects of inflation and other societal and economic factors),

using past experience adjusted for current trends, and any other factors that would modify past experience.⁴ Changes in estimates of claim costs resulting from the continuous review process and differences between estimates and payments for claims shall be recognized in income of the period in which the estimates are changed or payments are made. Estimated recoveries on unsettled claims, such as **salvage, subrogation**, or a potential ownership interest in real estate, shall be evaluated in terms of their estimated realizable value and deducted from the liability for unpaid claims. Estimated recoveries on settled claims other than mortgage guaranty and title insurance claims also shall be deducted from the liability for unpaid claims.

19. Real estate acquired in settling mortgage guaranty and title insurance claims shall be reported at fair value, that is, the amount that reasonably could be expected to be received in a current sale between a willing buyer and a willing seller. If no market price is available, the expected cash flows (anticipated sales price less maintenance and selling costs of the real estate) may aid in estimating fair value provided the cash flows are discounted at a rate commensurate with the risk involved. Real estate acquired in settling claims shall be separately reported in the balance sheet and shall not be classified as an investment. Subsequent reductions in the reported amount and realized gains and losses on the sale of real estate acquired in settling claims shall be recognized as an adjustment to claim costs incurred.

20. A liability for all costs expected to be incurred in connection with the settlement of unpaid claims (**claim adjustment expenses**) shall be accrued when the related liability for unpaid claims is accrued. Claim adjustment expenses include costs associated directly with specific claims paid or in the process of settlement, such as legal and adjusters' fees. Claim adjustment expenses also include other costs that cannot be associated with specific claims but are related to claims paid or

⁴Certain disclosures are required if the time value of money is considered in estimating liabilities for unpaid claims and claim adjustment expenses relating to short-duration contracts (paragraph 60(d)).

in the process of settlement, such as internal costs of the claims function.⁵

Liability for Future Policy Benefits

21. A liability for future policy benefits relating to long-duration contracts other than title insurance contracts (paragraph 17) shall be accrued when premium revenue is recognized. The liability, which represents the present value of future benefits to be paid to or on behalf of policyholders and related expenses less the present value of future net premiums (portion of **gross premium** required to provide for all benefits and expenses), shall be estimated using methods that include assumptions, such as estimates of expected investment yields, mortality, morbidity, terminations, and expenses, applicable at the time the insurance contracts are made. The liability also shall consider other assumptions relating to guaranteed contract benefits, such as coupons, annual endowments, and conversion privileges. The assumptions shall include provision for the **risk of adverse deviation**. Original assumptions shall continue to be used in subsequent accounting periods to determine changes in the liability for future policy benefits (often referred to as the "lock-in concept") unless a premium deficiency exists (paragraphs 35-37). Changes in the liability for future policy benefits that result from its periodic estimation for financial reporting purposes shall be recognized in income in the period in which the changes occur.

Investment Yields

22. Interest assumptions used in estimating the liability for future policy benefits shall be based on estimates of investment yields (net of related investment expenses) expected at the time insurance contracts are made. The interest assumption for each block of new insurance contracts (a group of

⁵Title insurance internal claim adjustment expenses, which generally consist of fixed costs associated with a permanent staff handling a variety of functions including claim adjustment, ordinarily are expensed as period costs because the costs are insignificant.

insurance contracts that may be limited to contracts issued under the same plan in a particular year) shall be consistent with circumstances, such as actual yields, trends in yields, portfolio mix and maturities, and the enterprise's general investment experience.

Mortality

23. Mortality assumptions used in estimating the liability for future policy benefits shall be based on estimates of expected mortality.

Morbidity

24. Morbidity assumptions used in estimating the liability for future policy benefits shall be based on estimates of expected incidences of disability and claim costs. Expected incidences of disability and claim costs for various types of insurance (for example, noncancelable and guaranteed renewable accident and health insurance contracts) and other factors, such as occupational class, waiting period, sex, age, and benefit period, shall be considered in making morbidity assumptions. The risk of antiselection (the tendency for lower terminations of poor risks) also shall be considered in making morbidity assumptions.

Terminations

25. Termination assumptions used in estimating the liability for future policy benefits shall be based on anticipated terminations and **nonforfeiture benefits**, using anticipated **termination rates** and contractual nonforfeiture benefits. Termination rates may vary by plan of insurance, age at issue, year of issue, frequency of premium payment, and other factors. If composite rates are used, the rates shall be representative of the enterprise's actual mix of business. Termination assumptions shall be made for long-duration insurance contracts without termination benefits because of the effects of terminations on anticipated premiums and claim costs.

Expenses

26. Expense assumptions used in estimating the liability for future policy benefits shall be based on estimates of expected nonlevel costs, such as termination or settlement costs, and costs after the premium-paying period. Renewal expense assumptions shall consider the possible effect of inflation on those expenses.

Costs Other Than Those Relating to Claims and Policy Benefits

27. Costs incurred during the period, such as those relating to investments, general administration, and policy maintenance, that do not vary with and are not primarily related to the acquisition of new and renewal insurance contracts shall be charged to expense as incurred.

Acquisition Costs

28. Acquisition costs are those costs that vary with and are primarily related to the acquisition of new and renewal insurance contracts. Commissions and other costs (for example, salaries of certain employees involved in the underwriting and policy issue functions, and medical and inspection fees) that are primarily related to insurance contracts issued or renewed during the period in which the costs are incurred shall be considered acquisition costs.

29. Acquisition costs shall be capitalized and charged to expense in proportion to premium revenue recognized. To associate acquisition costs with related premium revenue, acquisition costs shall be allocated by groupings of insurance contracts consistent with the enterprise's manner of acquiring, servicing, and measuring the profitability of its insurance contracts. Unamortized acquisition costs shall be classified as an asset.

30. If acquisition costs for short-duration contracts are determined based on a percentage relationship of costs incurred to premiums from contracts issued or renewed for a specified period, the percentage relationship and the period used, once

determined, shall be applied to applicable unearned premiums throughout the period of the contracts.

31. Actual acquisition costs for long-duration contracts shall be used in determining acquisition costs to be capitalized as long as gross premiums are sufficient to cover actual costs. However, estimated acquisition costs may be used if the difference is not significant. Capitalized acquisition costs shall be charged to expense using methods that include the same assumptions used in estimating the liability for future policy benefits.

Premium Deficiency

32. A probable loss on insurance contracts exists if there is a premium deficiency relating to short-duration or long-duration contracts. Insurance contracts shall be grouped consistent with the enterprise's manner of acquiring, servicing, and measuring the profitability of its insurance contracts to determine if a premium deficiency exists.

Short-Duration Contracts

33. A premium deficiency shall be recognized if the sum of expected claim costs and claim adjustment expenses, expected dividends to policyholders, unamortized acquisition costs, and maintenance costs exceeds related unearned premiums.⁶

34. A premium deficiency shall first be recognized by charging any unamortized acquisition costs to expense to the extent required to eliminate the deficiency. If the premium deficiency is greater than unamortized acquisition costs, a liability shall be accrued for the excess deficiency.

Long-Duration Contracts

35. Original policy benefit assumptions for long-duration con-

⁶Disclosure is required regarding whether the insurance enterprise considers anticipated investment income in determining if a premium deficiency relating to short-duration contracts exists (paragraph 60(e)).

tracts ordinarily continue to be used during the periods in which the liability for future policy benefits is accrued (paragraph 21). However, actual experience with respect to investment yields, mortality, morbidity, terminations, or expenses may indicate that existing contract liabilities, together with the present value of future gross premiums, will not be sufficient (a) to cover the present value of future benefits to be paid to or on behalf of policyholders and settlement and maintenance costs relating to a block of long-duration contracts and (b) to recover unamortized acquisition costs. In those circumstances, a premium deficiency shall be determined as follows:

Present value of future payments for benefits and related settlement and maintenance costs, determined using revised assumptions based on actual and anticipated experience	\$XX
Less the present value of future gross premiums, determined using revised assumptions based on actual and anticipated experience	<u>XX</u>
Liability for future policy benefits using revised assumptions	XX
Less the liability for future policy benefits at the valuation date, reduced by unamortized acquisition costs	<u>XX</u>
Premium deficiency	<u><u>\$XX</u></u>

36. A premium deficiency shall be recognized by a charge to income and (a) a reduction of unamortized acquisition costs or (b) an increase in the liability for future policy benefits. If a premium deficiency does occur, future changes in the liability shall be based on the revised assumptions. No loss shall be reported currently if it results in creating future income. The liability for future policy benefits using revised assumptions based on actual and anticipated experience shall be estimated periodically for comparison with the liability for future policy benefits (reduced by unamortized acquisition costs) at the valuation date.

37. A premium deficiency, at a minimum, shall be recognized if the aggregate liability on an entire line of business is deficient. In some instances, the liability on a particular line of business may not be deficient in the aggregate, but circumstances may be such that profits would be recognized in early years and losses in later years. In those situations, the liability shall be increased by an amount necessary to offset losses that would be recognized in later years.

Reinsurance

38. Amounts that are recoverable from reinsurers and that relate to paid claims and claim adjustment expenses shall be classified as assets, with an allowance for estimated uncollectible amounts. Estimated amounts recoverable from reinsurers that relate to the liabilities for unpaid claims and claim adjustment expenses shall be deducted from those liabilities. Ceded unearned premiums shall be netted with related unearned premiums. Receivables and payables from the same reinsurer, including amounts withheld, also shall be netted. **Reinsurance** premiums ceded and reinsurance recoveries on claims may be netted against related earned premiums and incurred claim costs in the income statement.

39. Proceeds from reinsurance transactions that represent recovery of acquisition costs shall reduce applicable unamortized acquisition costs in such a manner that net acquisition costs are capitalized and charged to expense in proportion to net revenue recognized (paragraph 29). If the ceding enterprise has agreed to service all of the related insurance contracts without reasonable compensation, a liability shall be accrued for estimated excess future servicing costs under the reinsurance contract. The net cost to the assuming enterprise shall be accounted for as an acquisition cost.

40. To the extent that a reinsurance contract does not, despite its form, provide for indemnification of the ceding enterprise by the reinsurer against loss or liability, the premium paid less the premium to be retained by the reinsurer shall be accounted for as a deposit by the ceding enterprise. Those contracts may be structured in various ways, but if, regardless of form, their substance is that all or part of the premium paid

by the ceding enterprise is a deposit, the amount paid shall be accounted for as such. A net credit resulting from the contract shall be reported as a liability by the ceding enterprise. A net charge resulting from the contract shall be reported as an asset by the reinsurer.

Policyholder Dividends

41. Policyholder dividends shall be accrued using an estimate of the amount to be paid.

42. If limitations exist on the amount of net income from **participating insurance** contracts of life insurance enterprises that may be distributed to stockholders, the policyholders' share of net income on those contracts that cannot be distributed to stockholders shall be excluded from stockholders' equity by a charge to operations and a credit to a liability relating to participating policyholders' funds in a manner similar to the accounting for net income applicable to minority interests. Dividends declared or paid to participating policyholders shall reduce that liability; dividends declared or paid in excess of the liability shall be charged to operations. Income-based dividend provisions shall be based on net income that includes adjustments between general-purpose and statutory financial statements that will reverse and enter into future calculations of the dividend provision.

43. For life insurance enterprises for which there are no net income restrictions and that use life insurance dividend scales unrelated to actual net income, policyholder dividends (based on dividends anticipated or intended in determining gross premiums or as shown in published dividend illustrations at the date insurance contracts are made) shall be accrued over the premium-paying periods of the contracts.

Retrospective and Contingent Commission Arrangements

44. If retrospective commission or experience refund arrangements exist under experience-rated insurance contracts, a separate liability shall be accrued for those amounts, based on experience and the provisions of the contract. Income in any

period shall not include any amounts that are expected to be paid to agents or others in the form of experience refunds or additional commissions. Contingent commissions receivable or payable shall be accrued over the period in which related income is recognized.

Investments

45. Bonds shall be reported at amortized cost if the insurance enterprise has both the ability and the intent to hold the bonds until maturity and there is no decline in the market value of the bonds other than a temporary decline. If an insurance enterprise is a trader in bonds and does not intend to hold the bonds until maturity, bonds shall be reported at market and temporary changes in the market value of the bonds shall be recognized as unrealized gains or losses (paragraph 50).

46. Common and nonredeemable preferred stocks shall be reported at market and temporary changes in the market value of those securities shall be recognized as unrealized gains or losses (paragraph 50). Preferred stocks that by their provisions must be redeemed by the issuer shall be reported at amortized cost if the insurance enterprise has both the ability and the intent to hold the stocks until redemption and there is no decline in the market value of the stocks other than a temporary decline.

47. Mortgage loans shall be reported at outstanding principal balances if acquired at par value, or at amortized cost if purchased at a discount or premium, with an allowance for estimated uncollectible amounts, if any. Amortization and other related charges or credits shall be charged or credited to investment income. Changes in the allowance for estimated uncollectible amounts relating to mortgage loans shall be included in realized gains and losses.

48. Real estate investments shall be reported at cost less accumulated depreciation and an allowance for any impairment in value. Depreciation and other related charges or credits shall be charged or credited to investment income. Changes in the allowance for any impairment in value relating to real estate investments shall be included in realized gains and losses.

49. Normal commitment fees received in connection with the placement of mortgage loans (less direct costs) shall be capitalized and recognized as revenue over the commitment period. Commitment fees that exceed current (normal) fees for mortgage loan commitments shall be considered an adjustment of the effective interest yield on the loan. Those excess fees shall be capitalized until the loan is made and then recognized as revenue over the period of the mortgage loan. If the mortgage loan is not ultimately made, the unamortized commitment fee shall be recognized as revenue at the end of the commitment period.

50. Realized gains and losses on all investments (including, but not limited to, stocks, bonds, mortgage loans, real estate, and joint ventures) shall be reported in the income statement below operating income and net of applicable income taxes. Realized gains and losses on the sale of assets other than investments, such as real estate used in the business, shall be reported in accordance with APB Opinion No. 30, *Reporting the Results of Operations*. Unrealized investment gains and losses, net of applicable income taxes, shall be reported as a separate component of stockholders' (policyholders') equity. Except as discussed in paragraph 51, unrealized gains or losses on common stocks, preferred stocks, or publicly traded bonds shall not be recognized in income until the sale, maturity, or other disposition of the investment.⁷

51. If a decline in the value of a common stock, preferred stock, or publicly traded bond below its cost or amortized cost is considered to be other than temporary, the investment shall be reduced to its net realizable value, which becomes the new cost basis. The amount of the reduction shall be reported as a realized loss. A recovery from the new cost basis shall be recognized as a realized gain only at the sale, maturity, or other disposition of the investment.

⁷This paragraph is not intended to preclude the accrual of losses on private-placement bonds when both conditions in paragraph 8 of FASB Statement No. 5, *Accounting for Contingencies*, are met.

Real Estate Used in the Business

52. Real estate shall be classified either as an investment or as real estate used in the enterprise's operations, depending on its predominant use. Depreciation and other real estate operating costs shall be classified as investment expenses or operating expenses consistent with the balance sheet classification of the related asset. Imputed investment income and rental expense shall not be recognized for real estate used in the business.

Separate Accounts

53. Separate accounts represent assets and liabilities that are maintained by an insurance enterprise for purposes of funding fixed-benefit or **variable annuity contracts**, pension plans, and similar activities. The contract holder generally assumes the investment risk, and the insurance enterprise receives a fee for investment management, certain administrative expenses, and mortality and expense risks assumed.

54. Investments in separate accounts shall be reported at market except for separate account contracts with guaranteed investment returns. For those separate accounts, the related assets shall be reported in accordance with paragraphs 45-51. Separate account assets and liabilities ordinarily shall be reported as summary totals in the financial statements of the insurance enterprise.

Income Taxes of Life Insurance Enterprises

Deferred Income Taxes

55. Because of the provisions of the Life Insurance Company

Income Tax Act of 1959 (Act),⁸ timing differences (paragraph 13(e) of APB Opinion No. 11, *Accounting for Income Taxes*) of life insurance enterprises arising in the current period may not affect the determination of income taxes in future periods when those timing differences reverse. Amounts determined in the with-and-without calculation (paragraph 36 of Opinion 11) need to be considered further to determine whether the difference will reverse in the future. Deferred taxes need not be provided for the current tax effect of timing differences if circumstances indicate that the current tax effect will not reverse in the future. Similarly, a change in category of taxation (the basis on which the enterprise determines its income tax liability) resulting from the with-and-without calculation need not be recognized unless circumstances indicate that a change in category will result when the timing difference reverses. If the reversal of tax effects cannot be reasonably determined, deferred income taxes shall be provided based on the differential determined using the with-and-without calculation as if the enterprise's tax return was filed on the basis on which financial statements are prepared, including any resulting change in category of taxation.

56. Although (a) special deductions (allowable only for income tax purposes) never enter into the determination of pretax accounting income in any period and (b) the amount of policyholder dividend deductions and special deductions may

⁸The Act contemplated taxation of total income of life insurance enterprises, but the determination of tax is complex because of the manner in which total taxable income is classified as investment income, gain from operations (including investment income and less special deductions for certain accident and health, group life, and nonparticipating insurance contracts), policyholders' surplus (gain from operations previously excluded from tax and the special deductions), and the interrelationship of those elements. Taxable income consists of (a) taxable investment income, (b) 50 percent of the amount by which gain from operations exceeds taxable investment income, and (c) any reductions in policyholders' surplus. If gain from operations is less than taxable investment income, the lesser amount, plus any reductions in policyholders' surplus, is taxable income. If a loss from operations occurs, there is no taxable income except to the extent that there are reductions in policyholders' surplus. Deductions from gain from operations for policyholder dividends and the special deductions are limited and unused deductions cannot be carried forward to subsequent periods.

be limited on the tax return (the unused deductions cannot be carried forward to subsequent periods), the amount of policyholder dividend deductions and available special deductions and limitations on those deductions may properly be determined based on pretax accounting income. For example, unused policyholder dividend deductions and special deductions may be used to offset timing differences that affect taxable income to the extent that the limitations on those deductions change when based on pretax accounting income, unless known or anticipated circumstances indicate that future taxable income resulting from the reversal of timing differences will not be offset by like deductions. In the case of provisions for policyholder dividends (including policyholder dividends deducted as part of the change in the liability for future policy benefits), which may be timing differences themselves, statutory limitations shall not be applied to eliminate their current tax effect unless circumstances indicate that the dividends will be limited when the timing differences reverse. Special deductions that are directly affected by timing differences need to be redetermined in the with-and-without calculation unless circumstances indicate that future special deductions will not be directly affected by the timing differences when the timing differences reverse. If the reversal of tax effects cannot be reasonably determined, special deductions that are not affected by timing differences and, therefore, do not reverse shall be limited to amounts available in the tax return.

57. A life insurance enterprise's liability for future policy benefits and capitalization and amortization of acquisition costs indirectly affect the amount of taxable investment income used in determining the income tax provision for financial reporting purposes. Differences in taxable investment income caused by differences between the liability for future policy benefits and capitalization and amortization of acquisition costs for income tax and financial reporting purposes shall be considered permanent differences (paragraph 13(f) of Opinion 11).

58. If deferred income taxes have not been provided on timing differences on the presumption that the timing differences will not have tax effects when they reverse and circumstances

change so that it becomes apparent that tax effects will result, deferred income taxes attributable to those timing differences shall be accrued and reported as income tax expense in that period; those income taxes shall not be reported as an extraordinary item. If deferred income taxes have been provided on timing differences and circumstances change so that it becomes apparent that the tax effects will differ from those originally expected, income taxes previously deferred shall be included in income only as the related timing differences reverse, regardless of whether the life insurance enterprise uses the gross change or net change method (paragraph 37 of Opinion 11).

Policyholders' Surplus

59. A difference between taxable income and pretax accounting income attributable to amounts designated as policyholders' surplus of a life insurance enterprise may not reverse until indefinite future periods or may never reverse. The insurance enterprise controls the events that create the tax consequences, and the enterprise generally is required to take specific action before the initial difference reverses. Therefore, a life insurance enterprise shall not accrue income taxes on the difference between taxable income and pretax accounting income attributable to amounts designated as policyholders' surplus. However, if circumstances indicate that the insurance enterprise is likely to pay income taxes, either currently or in later years, because of a known or expected reduction in policyholders' surplus, income taxes attributable to that reduction shall be accrued as a tax expense of the current period; the accrual of those income taxes shall not be accounted for as an extraordinary item.

Disclosures

60. Insurance enterprises shall disclose the following in their financial statements:

- a. The basis for estimating the liabilities for unpaid claims and claim adjustment expenses
- b. The methods and assumptions used in estimating the lia-

bility for future policy benefits with disclosure of the average rate of assumed investment yields in effect for the current year encouraged

- c. The nature of acquisition costs capitalized, the method of amortizing those costs, and the amount of those costs amortized for the period
- d. The carrying amount of liabilities for unpaid claims and claim adjustment expenses relating to short-duration contracts that are presented at present value in the financial statements and the range of interest rates used to discount those liabilities
- e. Whether the insurance enterprise considers anticipated investment income in determining if a premium deficiency relating to short-duration contracts exists
- f. The nature and significance of reinsurance transactions to the insurance enterprise's operations, including reinsurance premiums assumed and ceded, and estimated amounts that are recoverable from reinsurers and that reduce the liabilities for unpaid claims and claim adjustment expenses
- g. The relative percentage of participating insurance, the method of accounting for policyholder dividends, the amount of dividends, and the amount of any additional income allocated to participating policyholders
- h. The following information relating to stockholders' equity, statutory capital and surplus, and the effects of **statutory accounting practices** on the enterprise's ability to pay dividends to stockholders:
 - (1) The amount of statutory capital and surplus
 - (2) The amount of statutory capital and surplus necessary to satisfy regulatory requirements (based on the enterprise's current operations) if significant in relation to the enterprise's statutory capital and surplus
 - (3) The nature of statutory restrictions on the payment of dividends and the amount of retained earnings that is not available for the payment of dividends to stockholders
- i. For life insurance enterprises or a parent of a life insurance enterprise that is either consolidated or accounted for by the equity method:
 - (1) The treatment of policyholders' surplus under the U.S. Internal Revenue Code and that income taxes

- may be payable if the enterprise takes certain specified actions, which shall be appropriately described
- (2) The accumulated amount of policyholders' surplus for which income taxes have not been accrued
- j. For life insurance enterprises, any retained earnings in excess of policyholders' surplus on which no current or deferred federal income tax provisions have been made and the reasons for not providing the deferred taxes

Amendments to Other Pronouncements

61. The following footnote is added to the end of paragraph 6 of Opinion 11:

For life insurance enterprises, also refer to paragraphs 55-59 and subparagraphs 60(i) and 60(j) of FASB Statement No. 60, *Accounting and Reporting by Insurance Enterprises*.

62. The provisions of APB Opinion No. 23, *Accounting for Income Taxes—Special Areas*, that discuss policyholders' surplus of life insurance enterprises have been included in this Statement without reconsideration, and paragraphs 26-30 and footnote 11 of Opinion 23 are superseded by this Statement.

63. The references to AICPA insurance industry related Guides in footnote 8 of Opinion 30, paragraphs 41 and 102 of FASB Statement No. 5, *Accounting for Contingencies*, paragraph 4 of FASB Interpretation No. 15, *Translation of Unamortized Policy Acquisition Costs by a Stock Life Insurance Company*, and paragraph 7 of FASB Interpretation No. 22, *Applicability of Indefinite Reversal Criteria to Timing Differences*, are replaced by a reference to FASB Statement No. 60, *Accounting and Reporting by Insurance Enterprises*. The references to AICPA Statements of Position (SOPs) 78-6, *Accounting for Property and Liability Insurance Companies*, and 79-3, *Accounting for Investments of Stock Life Insurance Companies*, and to the AICPA Industry Audit Guides, *Audits of Fire and Casualty Insurance Companies* and *Audits of Stock Life Insurance Companies*, are deleted from Appendix A of FASB State-

ment No. 32, *Specialized Accounting and Reporting Principles and Practices in AICPA Statements of Position and Guides on Accounting and Auditing Matters*. The reference to the AICPA project on accounting by title insurance companies, which resulted in the issuance of SOP 80-1, *Accounting for Title Insurance Companies*, is deleted from Appendix B of Statement 32.

Effective Date and Transition

64. This Statement shall be effective for fiscal years beginning after December 15, 1982, with earlier application encouraged. Accounting changes adopted to conform to the provisions of this Statement shall be applied retroactively. In the year that this Statement is first applied, the financial statements shall disclose the nature of any restatement and its effect on income before extraordinary items, net income, and related per share amounts for each year presented. The individual effects of changing to conform to the provisions of this Statement shall be disclosed in the financial statements.

65. If retroactive restatement of all years presented is not practicable, the financial statements presented shall be restated for as many consecutive years as practicable and the cumulative effect of applying this Statement shall be included in determining net income of the earliest year restated (not necessarily the earliest year presented). If it is not practicable to restate any prior year, the cumulative effect shall be included in net income in the year in which this Statement is first applied. (Refer to paragraph 20 of APB Opinion No. 20, *Accounting Changes*.)

The provisions of this Statement need
not be applied to immaterial items.

This Statement was approved by the unanimous vote of the seven members of the Financial Accounting Standards Board:

Donald J. Kirk, *Chairman*

Frank E. Block

John W. March

Robert A. Morgan

David Mosso

Robert T. Sprouse

Ralph E. Walters

Appendix A

GLOSSARY

66. This appendix defines certain terms that are used in this Statement.

Acquisition costs

Costs incurred in the acquisition of new and renewal insurance contracts. Acquisition costs include those costs that vary with and are primarily related to the acquisition of insurance contracts (for example, agent and broker commissions, certain underwriting and policy issue costs, and medical and inspection fees).

Annuity contract

A contract that provides fixed or variable periodic payments made from a stated or contingent date and continuing for a specified period, such as for a number of years or for life. Also refer to variable annuity contract.

Assessment enterprise

An insurance enterprise that sells insurance to groups with similar interests, such as church denominations or professional groups. Some assessment enterprises also sell insurance directly to the general public. If funds are not sufficient to pay claims, then assessments may be made against members.

Claim

A demand for payment of a policy benefit because of the occurrence of an insured event, such as the death or disability of the insured; the maturity of an endowment; the incurrence of hospital or medical bills; the destruction or damage of property and related deaths or injuries; defects in, liens on, or challenges to the title to real estate; or the occurrence of a surety loss.

Claim adjustment expenses

Expenses incurred in the course of investigating and set-

ting claims. Claim adjustment expenses include any legal and adjusters' fees, and the costs of paying claims and all related expenses.

Cost recovery method

Under the cost recovery method, premiums are recognized as revenue in an amount equal to estimated claim costs as insured events occur until the ultimate premium is reasonably estimable, and recognition of income is postponed until that time.

Credit life insurance

Life insurance, generally in the form of decreasing term insurance, that is issued on the lives of borrowers to cover payment of loan balances in case of death.

Deposit method

Under the deposit method, premiums are not recognized as revenue and claim costs are not charged to expense until the ultimate premium is reasonably estimable, and recognition of income is postponed until that time.

Dividends to policyholders

Amounts distributable to policyholders of participating insurance contracts as determined by the insurer. Under various state insurance laws, dividends are apportioned to policyholders on an equitable basis. The dividend allotted to any contract often is based on the amount that the contract, as one of a class of similar contracts, has contributed to the income available for distribution as dividends.

Endowment contract

An insurance contract that provides insurance from inception of the contract to the maturity date (endowment period). The contract specifies that a stated amount, adjusted for items such as policy loans and dividends, if any, will be paid to the beneficiary if the insured dies before the maturity date. If the insured is still living at the maturity date, the policyholder will receive the maturity amount under the contract after adjustments,

if any. Endowment contracts generally mature at a specified age of the insured or at the end of a specified period.

Fraternal benefit society

An organization that provides life or health insurance to its members and their beneficiaries. Policyholders normally participate in the earnings of the society, and insurance contracts stipulate that the society has the power to assess its members if the funds available for future policy benefits are not sufficient to provide for benefits and expenses.

Gross premium

The premium charged to a policyholder for an insurance contract. Also refer to net premium.

Group insurance

Insurance protecting a group of persons, usually employees of an entity and their dependents. A single insurance contract is issued to their employer or other representative of the group. Individual certificates often are given to each insured individual or family unit. The insurance usually has an annual renewable contract period, although the insurer may guarantee premium rates for two or three years. Adjustments to premiums relating to the actual experience of the group of insured persons are common.

Incurred but not reported claims

Claims relating to insured events that have occurred but have not yet been reported to the insurer or reinsurer as of the date of the financial statements.

Liability for claim adjustment expenses

The amount needed to provide for the estimated ultimate cost required to investigate and settle claims relating to insured events that have occurred on or before a particular date (ordinarily, the balance sheet date), whether or not reported to the insurer at that date.

Liability for future policy benefits

An accrued obligation to policyholders that relates to insured events, such as death or disability. The liability for future policy benefits can be viewed as either (a) the present value of future benefits to be paid to or on behalf of policyholders and expenses less the present value of future net premiums payable under the insurance contracts or (b) the accumulated amount of net premiums already collected less the accumulated amount of benefits and expenses already paid to or on behalf of policyholders.

Liability for unpaid claims

The amount needed to provide for the estimated ultimate cost of settling claims relating to insured events that have occurred on or before a particular date (ordinarily, the balance sheet date). The estimated liability includes the amount of money that will be required for future payments on both (a) claims that have been reported to the insurer and (b) claims relating to insured events that have occurred but have not been reported to the insurer as of the date the liability is estimated.

Life insurance enterprise

An enterprise that can issue annuity, endowment, and accident and health insurance contracts as well as life insurance contracts. Life insurance enterprises may be either stock or mutual organizations.

Maintenance costs

Costs associated with maintaining records relating to insurance contracts and with the processing of premium collections and commissions.

Morbidity

The relative incidence of disability due to disease or physical impairment.

Mortality

The relative incidence of death in a given time or place.

Mortgage guaranty insurance enterprise

An insurance enterprise that issues insurance contracts that guarantee lenders, such as savings and loan associations, against nonpayment by mortgagors.

Net premium

As used in this Statement for long-duration insurance contracts, the portion of the gross premium required to provide for all benefits and expenses.

Nonforfeiture benefits

Those benefits in a life insurance contract that the policyholder does not forfeit, even for failure to pay premiums. Nonforfeiture benefits usually include cash value, paid-up insurance value, or extended-term insurance value.

Participating insurance

Insurance in which the policyholder is entitled to participate in the earnings or surplus of the insurance enterprise. The participation occurs through the distribution of dividends to policyholders.

Property and liability insurance enterprise

An enterprise that issues insurance contracts providing protection against (a) damage to, or loss of, property caused by various perils, such as fire and theft, or (b) legal liability resulting from injuries to other persons or damage to their property. Property and liability insurance enterprises also can issue accident and health insurance contracts. The term *property and liability insurance enterprise* is the current terminology used to describe a fire and casualty insurance enterprise. Property and liability insurance enterprises may be either stock or mutual organizations.

Reciprocal or interinsurance exchange

A group of persons, firms, or corporations commonly referred to as "subscribers" that exchange insurance contracts through an attorney-in-fact (an attorney authorized by a person to act in that person's behalf).

Reinsurance

A transaction in which a reinsurer (assuming enterprise), for a consideration (premium), assumes all or part of a risk undertaken originally by another insurer (ceding enterprise). However, the legal rights of the insured are not affected by the reinsurance transaction and the insurance enterprise issuing the insurance contract remains liable to the insured for payment of policy benefits.

Risk of adverse deviation

A concept used by life insurance enterprises in estimating the liability for future policy benefits relating to long-duration contracts. The risk of adverse deviation allows for possible unfavorable deviations from assumptions, such as estimates of expected investment yields, mortality, morbidity, terminations, and expenses. The concept is referred to as *risk load* when used by property and liability insurance enterprises.

Salvage

The amount received by an insurer from the sale of property (usually damaged) on which the insurer has paid a total claim to the insured and has obtained title to the property.

Statutory accounting practices

Accounting principles required by statute, regulation, or rule, or permitted by specific approval, that an insurance enterprise is required to follow when submitting its financial statements to state insurance departments.

Subrogation

The right of an insurer to pursue any course of recovery of damages, in its name or in the name of the policyholder, against a third party who is liable for costs relating to an insured event that have been paid by the insurer.

Term life insurance

Insurance that provides a benefit if the insured dies

within the period specified in the contract. The insurance is for level or declining amounts for stated periods, such as 1, 5, or 10 years, or to a stated age. Term life insurance generally has no loan or cash value.

Termination

In general, the failure to renew an insurance contract. Involuntary terminations include death, expirations, and maturities of contracts. Voluntary terminations of life insurance contracts include lapses with or without cash surrender value and contract modifications that reduce paid-up whole-life benefits or term-life benefits.

Termination rate

The rate at which insurance contracts fail to renew. Termination rates usually are expressed as a ratio of the number of contracts on which insureds failed to pay premiums during a given period to the total number of contracts at the beginning of the period from which those terminations occurred. The complement of the termination rate is persistency, which is the renewal quality of insurance contracts, that is, the number of insureds that keep their insurance in force during a period. Persistency varies by plan of insurance, age at issue, year of issue, frequency of premium payment, and other factors.

Title insurance enterprise

An enterprise that issues title insurance contracts to real estate owners, purchasers, and mortgage lenders, indemnifying them against loss or damage arising out of defects in, liens on, or challenges to their title to real estate.

Variable annuity contract

An annuity in which the amount of payments to be made are specified in units, rather than in dollars. When payment is due, the amount is determined based on the value of the investments in the annuity fund.

Whole-life contract

Insurance that may be kept in force for a person's entire life by paying one or more premiums. It is paid for in one

of three different ways: (a) ordinary life insurance (premiums are payable as long as the insured lives), (b) limited-payment life insurance (premiums are payable over a specified number of years), and (c) single-premium life insurance (a lump-sum amount paid at the inception of the insurance contract). The insurance contract pays a benefit (contractual amount adjusted for items such as policy loans and dividends, if any) at the death of the insured. Whole-life insurance contracts also build up non-forfeiture benefits.

Appendix B

BACKGROUND INFORMATION AND SUMMARY OF CONSIDERATION OF COMMENTS ON EXPOSURE DRAFT

67. As discussed in Statement 32, the FASB is extracting the specialized⁹ accounting and reporting principles and practices from AICPA SOPs and Guides on accounting and auditing matters and issuing them as FASB Statements after appropriate due process. This Statement extracts without significant change the specialized principles and practices relating to insurance enterprises from the AICPA Industry Audit Guides, *Audits of Stock Life Insurance Companies* and *Audits of Fire and Casualty Insurance Companies*; AICPA SOPs 78-6, 79-3, and 80-1; and Opinion 23. Accounting and reporting standards that apply to enterprises in general also apply to insurance enterprises, and the standards in this Statement are in addition to those standards.

68. Board members have assented to the issuance of this Statement on the basis that it is an appropriate extraction of existing specialized principles and practices and that a comprehensive reconsideration of those principles and practices was not contemplated in undertaking this FASB project. Most of the background material and discussion of accounting alternatives have not been carried forward from the AICPA insurance industry related Guides and SOPs. The Board's conceptual framework project on accounting recognition criteria will address recognition issues relating to elements of financial statements. A Statement of Financial Accounting Concepts resulting from that project in due course will serve as a basis for evaluating existing standards and practices. Accordingly, the Board may wish to evaluate the standards in this Statement when its conceptual framework project is completed.

⁹The term *specialized* is used to refer to those accounting and reporting principles and practices in AICPA Guides and SOPs that are neither superseded by nor contained in Accounting Research Bulletins, APB Opinions, FASB Statements, or FASB Interpretations.

69. This Statement does not address issues that currently are being studied by the insurance industry and the accounting and actuarial professions. Some of those issues include:

- a. What financial accounting and reporting principles should mutual life insurance enterprises, assessment enterprises, and fraternal benefit societies follow in their general-purpose financial statements?
- b. How should universal life insurance contracts and similar products that have been developed since the AICPA insurance industry related Guides and SOPs were originally issued be accounted for?
- c. For short-duration contracts:
 - (1) Should certain claim liabilities be discounted?
 - (2) Should anticipated investment income be considered in determining if a premium deficiency exists?
- d. What circumstances constitute a transfer of economic risk under a reinsurance contract?

70. An Exposure Draft of a proposed FASB Statement, *Accounting and Reporting by Insurance Enterprises*, was issued on November 18, 1981. The Board received 56 comment letters in response to the Exposure Draft. Certain of the comments received and the Board's consideration of them are discussed in this appendix.

Criteria for Distinguishing between Short-Duration and Long-Duration Contracts

71. Respondents commented on the appropriateness of the proposed criteria for distinguishing between short-duration and long-duration contracts and on whether the criteria could be improved. Some respondents said that the criteria were not well defined and could result in unintended changes in current accounting principles or practices because the criteria focused too narrowly on whether an insurance contract can be expected to remain in force for an extended period. They suggested that the criteria be clarified so that the nature of the insurance enterprise's obligations and policyholder rights under the provisions of the contract is considered.

72. Other respondents recommended that (a) accounting for insurance contracts should depend on the type of insurance enterprise issuing the contract, (b) the criteria for distinguishing between the two types of contracts should be based on the period of the contract, or (c) contracts should be specified by type of insurance protection that should be considered short-duration or long-duration so that the Statement can be specifically applied without exception or ambiguity.

73. In extracting the specialized principles and practices from the AICPA insurance industry related Guides and SOPs, the Board decided to establish a framework for accounting by insurance enterprises based on the nature of insurance contracts rather than type of insurance enterprise. The Board concluded that the criteria for distinguishing between short-duration and long-duration contracts should be clarified so that the nature of the insurance enterprise's obligations and policyholder rights under the provisions of the contract is considered, because that is consistent with (a) a general framework, (b) the principles in the AICPA insurance industry related Guides and SOPs, and (c) current practice.

Impairment in Value of Publicly Traded Securities

74. If an investment in a publicly traded security is reduced to its net realizable value, paragraph 51 requires that a gain not be recognized until the sale, maturity, or other disposition of the investment. Some respondents argued that permanent impairment is too absolute and often cannot be determined until after the event causing the impairment has occurred. In addition, they said that accounting for impaired amounts relating to publicly traded securities should be consistent with accounting for mortgage loans and real estate investments and reflective of an insurance enterprise's estimate of its ability to recover the carrying amount of those securities. They suggested that a standard consistent with Statement 5 be included to require adjustments of the carrying amount as circumstances change.

75. Other respondents agreed with paragraph 51 because it is an accurate extraction of SOPs 78-6, 79-3, and 80-1 and is con-

sistent with principles and practices applicable to enterprises in other industries. Based on that reasoning, the Board concluded that adjustments for increases in value of previously impaired publicly traded securities should continue to be proscribed.

Acquisition Costs: Primarily versus Directly Related

76. Some respondents commented on the definition in paragraph 28 that states that acquisition costs are those costs that vary with and are *primarily* related to the acquisition of new and renewal insurance contracts. They pointed out that, while the term *primarily* currently is used in practice by life insurance enterprises, the term *directly* is used in practice by property and liability insurance enterprises. They said that using the term *primarily* for all insurance enterprises could produce a different result for property and liability insurance enterprises. They recommended that the distinction between *primarily* and *directly* be retained in prescribing accounting principles for acquisition costs.

77. The Board believes that accounting principles and practices should not be applied differently among insurance enterprises without differences in underlying circumstances. Because the term *primarily* encompasses *directly*, the Board acknowledges that use of the term *primarily* might allow property and liability insurance enterprises to adopt broader guidelines in defining acquisition costs that are capitalizable. However, the Board believes that the use of the term *primarily* should not cause insurance enterprises to change their methods of defining acquisition costs to be capitalized.

Disclosure of the Average Rate of Assumed Investment Yields

78. Respondents commented on the benefits and costs of specifically requiring a disclosure of the average rate of assumed investment yields used in estimating the liability for future policy benefits. Some respondents said that disclosure of the average rate of assumed investment yields should be required because the disclosure would be relevant to users in assessing the reasonableness of estimated rates of return in relation to

current investment yields and in comparing insurance enterprises. They also expressed the view that the cost to the reporting enterprise would be minimal and that the benefit to users of insurance enterprise financial statements would outweigh the related cost.

79. Other respondents said it is likely that the development of a single average interest rate would involve a time-consuming and costly process that would not be justified by the benefit. They also argued that the weighted average of interest rate assumptions has little meaning when there are other significant assumptions that also must be considered in estimating the liability for future policy benefits and that the disclosure would likely result in a general perception that the rate possessed more significance and value than deserved.

80. The Board agrees with those respondents that said disclosure of the average rate of assumed investment yields is useful in assessing the reasonableness of estimated rates of return in relation to current investment yields and in comparing insurance enterprises. However, because of uncertainties relating to the cost of providing that disclosure, the Board decided to encourage but not require disclosure of that yield rate.

Disclosure of Discounting Short-Duration Contract Claim Liabilities and Considering Anticipated Investment Income in Determining Premium Deficiencies

81. The Exposure Draft would have required disclosure of (a) the effects (including amounts) of discounting short-duration contract claim liabilities and (b) the effects (including amounts) of an enterprise's considering anticipated investment income in determining if a premium deficiency relating to short-duration contracts exists. Some respondents said that insurance enterprises generally are not disclosing *amounts* in their notes because they believe disclosure of amounts is not required in the AICPA insurance industry related Guides and SOPs, which require disclosure of only the *effects*. Other respondents recommended that the Exposure Draft be revised to require disclosure of the carrying amount of claim liabilities

carried at present value in the balance sheet, the range of interest rates used to discount the claim liabilities, and the period of years over which the claims are being paid.

82. The phrase *including amounts* was included in the Exposure Draft to clarify what the Board understands was meant by *effects on the financial statements* in SOP 78-6. The Board believes that quantitative disclosures relating to the discounting of short-duration claim liabilities is necessary and, accordingly, decided to require disclosure of the carrying amount of short-duration contract liabilities that are presented at present value and the range of discount rates. However, the Board agreed that disclosure of amounts relating to an insurance enterprise's consideration of anticipated investment income in determining whether a premium deficiency exists is not necessary, and decided to require disclosure of only whether the insurance enterprise considers anticipated investment income in making that determination.

Disclosure of Statutory Requirements

83. With respect to the proposed disclosure of information relating to statutory capital and surplus requirements, some respondents suggested that disclosure be limited to the amount of statutory capital and surplus, minimum statutory requirements when significant, and statutory limitations on the payment of dividends. Other respondents recommended that the proposed disclosures parallel those in the SEC's recent revision of Article 7 of Regulation S-X. The Board agreed that the disclosure relating to statutory requirements needed clarification and revised the disclosure in accordance with the first sentence of this paragraph.

Reconciliation Disclosure

84. Respondents commented on whether disclosure of a reconciliation between financial reporting and statutory capital and income should be required. Some respondents said the disclosure should be required because the differences between statutory accounting practices and generally accepted accounting principles are an important element in the analysis

of an insurance enterprise's general-purpose financial statements. They pointed out that statutory accounting determines the amount of dividends that can be paid as well as the sufficiency of statutory capital and surplus for regulatory purposes and, therefore, is important to users of insurance enterprise financial statements.

85. Other respondents said the reconciliation disclosure should not be required because the original purpose of the reconciliation was intended principally to provide relevant information during the life insurance industry's transition from statutory reporting. They also said that the disclosure may cast doubt on the appropriateness of accounting principles used in the general-purpose financial statements.

86. The Board believes that the disclosure in paragraph 60(h) relating to statutory requirements is sufficient for the general-purpose financial statements of insurance enterprises.

Other Comments

87. Some respondents noted that paragraph 10 of the Exposure Draft would require a liability for claim adjustment expenses to be accrued when insured events occur and that life insurance enterprises currently are not accruing those costs. They said that accruing claim adjustment expenses associated with unpaid claims would require an accounting change for life insurance enterprises and that, although it may be appropriate to require life insurance enterprises to accrue a liability for those costs, those enterprises should be excluded from that requirement since the AICPA stock life insurance guide does not require that accrual. However, they acknowledged that the change is not likely to significantly affect the financial statements of life insurance enterprises. The Board believes that the requirement is appropriate and that it meets a criterion for change—that is, practices among insurance enterprises are different without differences in circumstances. In addition, the Board believes the requirement is consistent with the provisions of Statement 5.

88. Several respondents suggested various substantive changes to the Exposure Draft. Adoption of those suggestions would have required a reconsideration of some of the provisions of the Guides and SOPs. Such a reconsideration is not contemplated in the extraction project unless a proposed change meets one of the three criteria for change included in the "Notice for Recipients" of the Exposure Draft or is broadly supported. The proposed changes did not meet the criteria for change and were not broadly supported. Accordingly, the Board did not adopt those suggestions. However, based on suggestions from respondents to the Exposure Draft, the Board has made several other changes that it believes clarify the Statement.

89. The Board has concluded that it can reach an informed decision on the basis of existing information without a public hearing and that the effective date and transition specified in paragraphs 64 and 65 are advisable in the circumstances.

Statement of Statutory Accounting Principles No. 53

Property Casualty Contracts—Premiums

STATUS

Type of Issue:	Common Area
Issued:	Initial Draft
Effective Date:	January 1, 2001
Affects:	No other pronouncements
Affected by:	No other pronouncements
Interpreted by:	INT 99-23, INT 01-23, INT 02-11

STATUS	1
SCOPE OF STATEMENT	3
SUMMARY CONCLUSION.....	3
Earned but Unbilled Premium	4
Advance Premiums.....	4
Premium Deposits on Perpetual Fire Deposits	5
Premium Deficiency Reserve	5
Disclosures	5
Relevant Literature	5
Effective Date and Transition.....	5
RELEVANT ISSUE PAPERS.....	6

Property Casualty Contracts—Premiums**SCOPE OF STATEMENT**

1. This statement establishes general statutory accounting principles for the recording and recognition of premium revenue for property and casualty contracts as defined in *SSAP No. 50 - Classifications and Definitions of Insurance or Managed Care Contracts In Force*.
2. Specific statutory requirements for certain property and casualty premiums are addressed in the following statements: (a) *SSAP No. 57—Title Insurance*, (b) *SSAP No. 58—Mortgage Guaranty Insurance*, (c) *SSAP No. 60—Financial Guaranty Insurance*, (d) *SSAP No. 62—Property and Casualty Reinsurance*, (e) *SSAP No. 65—Property and Casualty Contracts*, and (f) *SSAP No. 66—Retrospectively Rated Contracts and Contracts*.

SUMMARY CONCLUSION

3. Except as provided for in paragraph 4, written premium is defined as the contractually determined amount charged by the reporting entity to the policyholder for the effective period of the contract based on the expectation of risk, policy benefits, and expenses associated with the coverage provided by the terms of the insurance contract. Frequently, insurance contracts are subject to audit by the reporting entity and the amount of premium charged is subject to adjustment based on the actual exposure. Premium adjustments are discussed in paragraphs 8 through 11 of this statement.
4. For workers' compensation contracts, which have a premium that may periodically vary based upon changes in the activities of the insured, written premiums may be recorded on an installment basis to match the billing to the policyholder. Under this type of arrangement, the premium is determined and billed according to the frequency stated in the contract, and written premium is recorded on the basis of that frequency.
5. Written premiums for all other contracts shall be recorded as of the effective date of the contract. Upon recording written premium, a liability, the unearned premium reserve, shall be established to reflect the amount of premium for the portion of the insurance coverage that has not yet expired. Flat fee service charges on installment premiums¹ (fees charged to policyholders who pay premiums on an installment basis rather than in full at inception of contract) are reported in the Other Income section of the Underwriting and Investment Exhibit as Finance and Service Charges. Flat fee service charges on installment premiums, which do not meet the requirements outlined in footnote 1 (e.g., policy may be cancelled for non-payment of fee or fee is refundable), shall be recorded as written premium on the effective date of the contract and subject to the unearned premium guidelines included in paragraph 7.
6. The exposure to insurance risk for most property and casualty insurance contracts does not vary significantly during the contract period. Therefore, premiums from those types of contracts shall be recognized in the statement of income, as earned premium, using either the daily pro-rata or monthly pro-rata methods as described in paragraph 7. Certain statements provide for different methods of recognizing premium in the statement of operations for specific types of contracts. For contracts not separately

¹ If the policyholder elects to pay an installment rather than the full amount or the full remaining balance, the policyholder is traditionally charged a flat fee service charge on the subsequent billing cycle(s). The amount charged is primarily intended to compensate the insurer for the additional administrative costs associated with processing more frequent billings and has no relationship to the amount of insurance coverage provided, the period of coverage, or the lost investment income associated with receiving the premium over a period of time rather than in a lump sum. As described, there is no underwriting risk associated with this service charge. If a policyholder does not pay the service charge, the policy is not cancelled (unlike non-payment of premium), but instead the policy is converted back to an annual pay plan. If a policyholder cancels coverage, the premium is returned but the service charge is not, as the service charge is not a part of premium. Clarification of finance and service charges as other income should not be construed as having any bearing on whether such charges are subject to premium taxation, which remains an issue of state law and regulation.

identified in specific statements where the reporting entity can demonstrate the period of risk differs significantly from the contract period, premiums shall be recognized as revenue over the period of risk in proportion to the amount of insurance protection provided.

7. One of the following methods shall be used for computation of the unearned premium reserve:
 - a. Daily pro rata method—Calculate the unearned premium on each policy—At the end of each period, the calculation is made on each item of premium to ascertain the unexpired portion and to arrive at the aggregate unearned premium reserve;
 - b. Monthly pro rata method—This method assumes that, on average, the same amount of business is written each day of any month so that the mean will be the middle of the month. For example, one-year premiums written during the first three months of the year have, at the end of the year, the following unearned fractions: January-1/24; February-3/24; March-5/24.
8. Additional premiums charged to policyholders for endorsements and changes in coverage under the contract shall be recorded on the effective date of the endorsement and accounted for in a manner consistent with the methods discussed in paragraphs 4 through 7. This is done so that, at any point in time, a liability is accrued for unearned premium related to the unexpired portion of the policy endorsement.

Earned but Unbilled Premium

9. Adjustments to the premium charged for changes in the level of exposure to insurance risk (e.g., audit premiums on workers' compensation policies) are generally determined based upon audits conducted after the policy has expired. Reporting entities shall estimate audit premiums, the amount generally referred to as earned but unbilled (EBUB) premium, and shall record the amounts as an adjustment to premium, either through written premium or as an adjustment to earned premium. The estimate for EBUB may be determined using actuarially or statistically supported aggregate calculations using historical company unearned premium data, or per policy calculations.
10. EBUB shall be adjusted upon completion of the audit and the adjustment shall be recognized as revenue immediately. Upon completion of an audit that results in a return of premiums to the policyholder, earned premiums shall be reduced.
11. Reporting entities shall establish all of the requisite liabilities associated with the asset such as commissions and premium taxes.
12. Ten percent of EBUB in excess of collateral specifically held and identifiable on a per policy basis shall be reported as a nonadmitted asset. To the extent that amounts in excess of the 10% are not anticipated to be collected, they shall be written off against operations in the period the determination is made.

Advance Premiums

13. Advance premiums result when the policies have been processed, and the premium has been paid prior to the effective date. These advance premiums are reported as a liability in the statutory financial statement and not considered income until due. Such amounts are not included in written premium or the unearned premium reserve.

Premium Deposits on Perpetual Fire Deposits

14. Premium deposits on perpetual fire insurance risks should be charged as a liability to the extent of at least 90% of the gross amount of such deposit.

Premium Deficiency Reserve

15. When the anticipated losses, loss adjustment expenses, commissions and other acquisition costs, and maintenance costs exceed the recorded unearned premium reserve, and any future installment premiums on existing policies, a premium deficiency reserve shall be recognized by recording an additional liability for the deficiency, with a corresponding charge to operations. Commission and other acquisition costs need not be considered in the premium deficiency analysis to the extent they have previously been expensed. For purposes of determining if a premium deficiency exists, insurance contracts shall be grouped in a manner consistent with how policies are marketed, serviced and measured. A liability shall be recognized for each grouping where a premium deficiency is indicated. Deficiencies shall not be offset by anticipated profits in other policy groupings.

16. If a premium deficiency reserve is established in accordance with paragraph 15, disclose the amount of that reserve. If a reporting entity utilizes anticipated investment income as a factor in the premium deficiency calculation, disclosure of such shall be made in the financial statements.

Disclosures

17. Disclose the aggregate amount of direct premiums written through managing general agents or third party administrators. For purposes of this disclosure, a managing general agent means the same as in Appendix A-225. If this amount is equal to or greater than 5% of surplus, provide the following information for each managing general agent and third party administrator:

- a. Name and address of managing general agent or third party administrator;
- b. Federal Employer Identification Number;
- c. Whether such person holds an exclusive contract;
- d. Types of business written;
- e. Type of authority granted (i.e., underwriting, claims payment, etc.); and
- f. Total premium written.

18. Refer to the preamble for further discussion regarding disclosure requirements.

Relevant Literature

19. This statement rejects *FASB Statement No. 60, Accounting and Reporting by Insurance Enterprises*.

Effective Date and Transition

20. This statement is effective for years beginning January 1, 2001. A change resulting from the adoption of this statement shall be accounted for as a change in accounting principle in accordance with *SSAP No. 3—Accounting Changes and Corrections of Errors*.

RELEVANT ISSUE PAPERS

- Issue Paper No. 53—Property Casualty Contracts—Premiums



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 40**

**Compliance with the NAIC Valuation of Life Insurance Policies
Model Regulation with Respect to Deficiency Reserve Mortality**

**Developed by the
Task Force on XXX Regulation of the
Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 2000**

Doc. No. 075

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December 2000

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Valuation of Life Insurance Policies

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 40

This booklet contains the final version of ASOP No. 40, *Compliance with the NAIC Valuation of Life Insurance Policies Model Regulation with Respect to Deficiency Reserve Mortality*.

Background

In March 1999, the National Association of Insurance Commissioners (NAIC) adopted a revised version of the Valuation of Life Insurance Policies Model Regulation (hereinafter the *Model*), often referred to as "Regulation XXX." The *Model* specifies an effective date of January 1, 2000, and does not apply to policies issued prior to the effective date. Certain types of plans are not subject to the *Model*.

The *Model* specifies that the 1980 Commissioners' Standard Ordinary mortality tables (hereinafter the 1980 CSO valuation tables) are to be used as the minimum mortality standard for basic reserves. The *Model* also includes several tables of select factors that may be applied to the 1980 CSO valuation tables during the first segment, as defined in the *Model*, for both basic reserves and deficiency reserves. In addition, the *Model* allows the appointed actuary to apply certain percentages (hereinafter X factors) to these select factors to modify the mortality basis for deficiency reserves for the first segment. The choice of the X factors is subject to certain limiting parameters and tests that are specified in the *Model*.

The *Model* specifies that if any X factor for any policy in a company is less than 100%, then the standard actuarial opinion and memorandum for the company must be based on asset adequacy analysis, and, in addition, the appointed actuary must annually opine, for all policies subject to the *Model*, as to whether the mortality rates resulting from application of the X factors meet the requirements of the *Model*. The *Model* provides that this additional opinion shall be supported by an actuarial report, subject to appropriate actuarial standards of practice promulgated by the Actuarial Standards Board.

Critical Issues

A key issue for the appointed actuary is ensuring that the X factors comply with the limiting parameters and tests specified in the regulation, based on anticipated mortality during the first

segment. This task is complicated by the number of different underwriting classes and plans for which X factors may be determined. There is an additional danger that current X factors would need to be increased at some future date, with the possibility of resultant large reserve increases and shocks to surplus.

Sources of experience mortality data used as the basis for anticipated mortality are very important, especially for smaller companies and for newer products or mortality classes with no significant mortality experience upon which to draw. The appointed actuary will need to consider how to treat data from different sources. Section 3.5.2 includes guidance as to the hierarchy of preference for experience on which to base anticipated mortality. Data from reinsurers are included as an acceptable source of data, among others, if the data are relevant and needed to develop a credible basis for anticipated mortality.

The goal of demonstrating confidence in the anticipated mortality underlying the X factors is very important. There are no specific rules to follow in the preparation of this demonstration. However, approval of X factors by some state regulators will likely depend on their satisfaction with these demonstrations and the implied amount of professionalism used in making the X factor determinations. The form and content of the supporting actuarial report can be significant to the regulator in considering approval of the X factors.

The use of mortality experience net of reinsurance was considered. The task force reached the conclusion that a company's own mortality experience on direct plus assumed business should be used before any reduction of exposure or claims on reinsurance ceded. This conclusion is stated in section 3.4.

Exposure Drafts

The first exposure draft of this standard was issued in September 1999 with a comment deadline of March 31, 2000. The Task Force on XXX Regulation carefully considered the fifteen comment letters received. A summary of the substantive issues contained in these comment letters and the task force's responses are in appendix 2 of the second exposure draft of this standard.

The second exposure draft was issued in June 2000 with a comment deadline of October 15, 2000. Four comment letters were received. The Task Force on XXX Regulation carefully considered these comment letters and made the following changes to the final ASOP:

1. In section 3.4, Creation of X Factor Classes, the task force split the paragraph dealing with reinsurance into two paragraphs to clarify the guidance with respect to reinsurance assumed and reinsurance ceded. On reinsurance assumed, the task force clarified that separate X factor classes should be considered if anticipated mortality on assumed business is materially different from that on direct business.

2. In section 3.5.2, Deriving Anticipated Mortality, the task force clarified that reinsurance should be considered in deriving anticipated mortality and that the anticipated mortality on reinsured business should exclude the effect of experience refunds or other adjustments contained in the reinsurance agreements.
3. In appendix 1, under the section on assessment of anticipated mortality, the cautionary language associated with the discussion on hypothesis testing was rewritten and moved to the end of the section as general guidance to the appointed actuary in applying any approach.

For a summary of the substantive issues contained in these comment letters, please see appendix 2. The task force and Life Committee thank all those who commented on the first and second exposure drafts.

The ASB voted in December 2000 to adopt this standard.

Task Force on XXX Regulation

John W. Brumbach, Chairperson

Andrew F. Bodine	Lew H. Nathan
Robert W. Foster Jr.	Michael Palace
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ACTUARIAL STANDARD OF PRACTICE NO. 40

COMPLIANCE WITH THE NAIC VALUATION OF LIFE INSURANCE POLICIES MODEL REGULATION WITH RESPECT TO DEFICIENCY RESERVE MORTALITY

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 Purpose—The purpose of this actuarial standard of practice (ASOP) is to provide guidance to appointed actuaries with respect to annual opinions and supporting actuarial reports as to whether certain mortality rates for minimum reserves used to determine deficiency reserves meet the requirements of the National Association of Insurance Commissioners (NAIC) *Valuation of Life Insurance Policies Model Regulation*, as amended by the NAIC in March 1999 (hereinafter the *Model*). On plans of life insurance elected by the company, the *Model* allows the appointed actuary to adjust certain mortality rates to reflect anticipated mortality, without recognition of mortality improvement beyond the valuation date, for use in calculating deficiency reserves. This standard provides guidance to the appointed actuary in selecting the adjustments to these mortality rates and in assessing whether the rates meet the requirements of the *Model*.

- 1.2 Scope—This standard applies to appointed actuaries complying with the regulatory requirements governing the mortality rates used for purposes of calculating deficiency reserves on certain plans of insurance prepared in accordance with the *Model*.

The scope of this standard does not include compliance with state regulations that differ materially from the *Model* with regard to the issues addressed in this standard. Appointed actuaries complying with requirements of a regulation that differs materially from the *Model* should consider the guidance in this standard to the extent that it is appropriate.

- 1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the appointed actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 Effective Date—This standard will be effective for all statements of actuarial opinion provided for reserves with a valuation date on or after May 1, 2001.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 Anticipated Mortality—The appointed actuary's assumption about the mortality to be experienced in the future on a group of policies.
- 2.2 Antiselection—The actions of individuals, acting for themselves or for others, who are motivated directly or indirectly to take financial advantage of the risk classification system.
- 2.3 Appointed Actuary—Any individual who is appointed or retained in accordance with the requirements set forth in the model NAIC *Actuarial Opinion and Memorandum Regulation*.
- 2.4 Basic Reserves—Reserves calculated in accordance with section 5 of the model NAIC *Standard Valuation Law*.
- 2.5 Contract Segmentation Method—The method of dividing the period from issue to mandatory expiration of a policy into successive segments, with the length of each segment being defined as set forth in section 4 of the *Model* and using the assumptions as set forth in section 4 of the *Model*.
- 2.6 Credibility—A measure of the predictive value in a given application that the actuary attaches to a particular body of data (predictive is used here in the statistical sense and not in the sense of predicting the future).
- 2.7 Deficiency Reserves—The excess, if greater than zero, of minimum reserves calculated in accordance with section 8 of the model NAIC *Standard Valuation Law* over basic reserves.
- 2.8 Full Credibility—The level at which a particular body of data is assigned full predictive value based on a selected confidence interval.
- 2.9 Model Select Mortality Factors—The select mortality factors in the appendix of the *Model*.
- 2.10 Policy—Any life insurance policy subject to the *Model*.
- 2.11 Ten-Year Select Factors—The select factors adopted with the 1980 amendments to the model NAIC *Standard Valuation Law*.
- 2.12 X Factor Class—A group of policies under one or more plans of insurance to which a single set of X factors applies. An example of an X factor class could be a male preferred nonsmoker underwriting class, having one set of X factors covering all issue ages and durations for several plans of insurance.

- 2.13 X Factors—For durations in the first segment (only), as determined under the contract segmentation method, the percentages that may be applied to the *Model* select mortality factors for the purpose of calculating deficiency reserves. Subject to the requirements set forth in section 5 of the *Model*, the X factors may vary by policy year, policy form, underwriting classification, issue age, or any other policy factor expected to affect mortality experience.
- 2.14 1980 CSO Valuation Tables—The Commissioners' 1980 Standard Ordinary Mortality Table without ten-year select factors, incorporated in the 1980 amendments to the model NAIC *Standard Valuation Law*, and variations of the 1980 CSO valuation tables approved by the NAIC, such as the smoker and nonsmoker versions approved in December 1983.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 Regulatory Requirements—Section 5 of the *Model* contains the requirements governing the mortality rates to be used for the purpose of calculating deficiency reserves. The appointed actuary should be familiar with the *Model* and any significant state variations, and should be satisfied that applicable actuarial requirements have been met.
- 3.2 Actuarial Opinion—The *Model* contains requirements regarding the selection and continued use of X factors to adjust certain mortality rates for purposes of calculating deficiency reserves. If any X factor is less than 100% at any duration for any policy, the appointed actuary should annually prepare an opinion and supporting actuarial report, as required by the *Model* and in accordance with section 4 of this standard.
- 3.3 X Factor Requirements—The X factors may be used only for durations in the first segment, as determined by the contract segmentation method. In determining compliance with each requirement, the appointed actuary should take into account only the applicable durations in the first segment. Certain requirements are relatively straightforward; for example, no X factor can be less than 20%. Others call for professional judgment, particularly requirements that involve an assessment of anticipated mortality.

Two requirements contain tests that directly or indirectly compare valuation mortality rates, as adjusted by X factors, to a variant of anticipated mortality. The appointed actuary should demonstrate that the X factors adopted satisfy these tests.

- a. Section 5.B(3)(d) of the *Model* requires that, for the first segment, the actuarial present value of future death benefits calculated using the mortality rates resulting from the application of the X factors be greater than or equal to the actuarial present value of future death benefits calculated using anticipated mortality without recognition of mortality improvement beyond the valuation date. The actuarial present values should be calculated using the valuation interest rate used for basic reserves and the appropriate mortality for each situation.

- b. Section 5.B(3)(e) of the *Model* requires that, for the first segment, the mortality rates resulting from the application of the X factors be at least as great as anticipated mortality, without recognition of mortality improvement beyond the valuation date, in each of the first five years after the valuation date.

3.4 Creation of X Factor Classes—The appointed actuary should consider the composition and characteristics of the policies issued under a plan of insurance in determining the appropriate X factor classes that will be applicable within that plan. The policies that comprise an X factor class generally should have similar underwriting or experience characteristics. When X factor classes are similar across various plans of insurance, these X factor classes may be combined into a common single X factor class.

The appointed actuary should consider the presence of reinsurance in creating X factor classes. Anticipated mortality should be assessed and X factor classes should be created on a gross basis (i.e., direct business plus reinsurance assumed, before deducting reinsurance ceded). To the extent that anticipated mortality on reinsurance assumed is materially different from that on direct business, the appointed actuary should consider creating separate X factor classes.

With respect to reinsurance ceded, the anticipated mortality on ceded business should not be materially different from the anticipated mortality of the X factor class from which the business is ceded. If the difference is material, the appointed actuary should consider creating separate X factor classes.

When creating X factor classes, the appointed actuary should be satisfied that mortality studies of company experience for each X factor class and for all classes combined are available, to the extent experience exists, or will be available as experience emerges in the future.

3.5 Selection of X Factors—The *Model* allows the company to adjust the *Model* select mortality factors by X factors for the purpose of calculating deficiency reserves for specified plans of insurance elected by the company. The appointed actuary should select the X factors for each X factor class, based on anticipated mortality for each class, without recognition of mortality improvement beyond the valuation date. As uncertainty concerning the level of anticipated mortality increases, the appointed actuary should consider providing a margin for conservatism, such as by selecting higher X factors.

Anticipated mortality may, for some X factor classes, exceed the 1980 CSO valuation tables with *Model* select mortality factors applied, resulting in X factors greater than 100%.

In determining anticipated mortality and in selecting X factors, the appointed actuary should be guided by the following considerations:

3.5.1 Relevant Company Experience—The appointed actuary should take into account the level and trend of actual company mortality experience in assessing

anticipated mortality for each X factor class. However, in accordance with the *Model*, no recognition should be made of mortality improvement beyond the valuation date.

The appointed actuary should use the most recent relevant company experience that is practicably available. Consideration should be given to the length of the observation period, recognizing the tradeoff between having insufficient data if the period is too short and having data no longer relevant if the period is too long. The results of the mortality studies should be reviewed for reasonableness.

- 3.5.2 Deriving Anticipated Mortality—If relevant company experience for a particular X factor class is available and has full credibility, the appointed actuary should use that experience as the basis for deriving anticipated mortality.

In situations where relevant company experience for a particular X factor class is not available or does not have full credibility, the appointed actuary should derive anticipated mortality in a reasonable and appropriate manner from actual experience and past trends in experience of other similar types of business, either in the same company, in other companies (including reinsurance companies), or from other sources, generally in that order of preference.

If the relevant company experience for a particular X factor class and other relevant experience are insufficient to form an assumption, the appointed actuary should use professional judgment in assessing anticipated mortality, taking into account where, in the spectrum of mortality experience, such business would be expected to fall relative to the mortality experience for other X factor classes.

The appointed actuary should take into account the effect that lapsation or nonrenewal activity has had or would be expected to have on mortality. The appointed actuary should specifically take into account the adverse effect of any anticipated or actual increase in gross premiums on lapsation, and the resultant effect on mortality due to antiselection. The appointed actuary should also take into account any known positive and negative changes in mortality due to the environment in which the company operates and the possible net adverse impact on mortality associated with those changes.

The appointed actuary should consider the presence of reinsurance in deriving anticipated mortality, as noted in section 3.4. The anticipated mortality on reinsured business, both assumed and ceded, should pertain to that on the reinsured lives and exclude the effect of experience refunds or other adjustments, however characterized in the reinsurance agreements.

- 3.6 Periodic Assessment of Anticipated Mortality—The appointed actuary should annually review relevant emerging experience for the purpose of assessing the appropriateness of anticipated mortality for each X factor class and, in aggregate, for all X factor classes combined. If the appointed actuary chooses to continue to use the prior anticipated

mortality assumptions, then the appointed actuary should determine whether the prior anticipated mortality assumptions are appropriate in light of any relevant emerging experience. Statistical analyses may be useful in making this determination. Other quantitative analyses may be used provided the appointed actuary can satisfactorily support such analyses as being sufficient to assess the appropriateness of anticipated mortality.

If the results of statistical or other testing indicate that previously anticipated mortality for a given X factor class is inappropriate, then the appointed actuary should set a new anticipated mortality assumption for the X factor class.

After analyzing the appropriateness of the anticipated mortality for each X factor class in isolation and adjusting anticipated mortality as necessary, the appointed actuary should analyze the appropriateness of the anticipated mortality assumptions at the aggregate level. If analysis at the aggregate level indicates that aggregate anticipated mortality is inadequate, then the appointed actuary should adjust the anticipated mortality assumption for one or more X factor classes until the appointed actuary is satisfied that the anticipated mortality assumptions are adequate at the aggregate level.

- 3.7 Adjustments to X Factors—The appointed actuary should use the anticipated mortality (without recognition of mortality improvement beyond the valuation date) for each X factor class, as adjusted for relevant emerging experience, for the purpose of determining whether the X factors for the class meet the requirements of the *Model*. If any requirement of the *Model* is not satisfied, the appointed actuary should adjust the X factors for the class to the extent necessary to meet such requirement.

The appointed actuary should consider the trend in mortality when deciding whether to adjust X factors, as permitted by the *Model*. The level and trend of mortality experience on similar types of business in other companies, or from other sources, if available, would be an important consideration in making this decision.

- 3.8 Basis of Exposure—The appointed actuary should analyze the level and trend of actual mortality experience primarily by using exposures based on amounts or units of insurance. These measures are most meaningful from the standpoint of financial impact on the company. Other measures of exposure, such as number of lives, can also be useful in analyzing experience.

Section 4. Communications and Disclosures

- 4.1 Required Communications—The opinion required by section 3.2 applies to all policies on specified plans of insurance for which the company has elected to apply *Model* select mortality factors for purposes of calculating deficiency reserves. For policies (on such specified plans) without X factors applied, the opinion should reflect implied X factors of 100%.

- 4.1.1 Opinion—The opinion should indicate, as of the valuation date, whether the mortality rates resulting from the application of the company's X factors meet the requirements of the *Model*. If the mortality rates do not meet all the requirements, a qualified opinion should be rendered, disclosing those requirements that are not met.
- 4.1.2 Actuarial Report—An actuarial report should be prepared in support of the opinion. The report should include at least the following items:
- a. Purpose—The report should indicate its purpose and refer to the specific opinion that it supports.
 - b. Specified Plans—The report should identify the specific plans of insurance for which the company has elected to apply *Model* select mortality factors for the purpose of calculating deficiency reserves. The report should briefly describe each plan, including its markets and underwriting bases, and indicate for each X factor class of business on the plan the amount in force on the valuation date in terms of policy or rider count, face amount, basic reserves, and deficiency reserves.
 - c. X Factor Compliance—The report should describe the process and key results which demonstrate that the X factors for the specified plans of life insurance comply with each of the requirements of the *Model*. The report should describe, to the extent applicable, each of the following:
 - 1. company experience studies, industry experience, and other sources of information concerning relevant experience used as a basis for determining anticipated mortality, including a summary of the findings and results;
 - 2. analyses performed to evaluate the credibility of relevant, historical company experience when establishing anticipated mortality for each X factor class, including a description of related experience or a statement that professional judgement had been used;
 - 3. mortality projections made and reflected in anticipated mortality, if any, from the period of exposure of relevant experience studies to the valuation date;
 - 4. statistical or other quantitative analyses performed in assessing the continued appropriateness of the anticipated mortality assumption for each X factor class and for all X factor classes in aggregate, in light of relevant emerging company experience, and a summary of changes made as a result of the analyses;

5. anticipated mortality, without recognition of mortality improvement beyond the valuation date, for each X factor class and for all X factor classes in aggregate;
 6. results of the tests of X factors required by the *Model*, any adjustments made to the X factors as a result of these tests, and the effect on deficiency reserves resulting from any such adjustments; and
 7. any changes made in the approach or parameters applied to the statistical analyses or tests performed compared to those performed at the last annual valuation.
- d. **Schedule of X Factors**—The report should include a schedule showing for the specified plans of life insurance the X factors for each X factor class as of the valuation date, with an indication as to which X factors are new or have been changed since the last annual valuation.
- 4.2 **Documentation**—The appointed actuary should create records and other appropriate documentation supporting the opinion required by section 3.2 and, to the extent practicable, should take reasonable steps to ensure that this documentation will be retained for a reasonable period of time (and no less than the length of time necessary to comply with any statutory regulatory, or other requirements). The appointed actuary need not retain the documentation personally; for example, it may be retained by the appointed actuary's employer. Such documentation should identify the data, assumptions, and methods used by the appointed actuary with sufficient clarity that another actuary qualified in the same practice area could evaluate the reasonableness of the appointed actuary's work. Unless the actuarial report required by section 4.1.2 reasonably satisfies the need for documentation, such documentation should also be available to the appointed actuary's employer or client.
- 4.3 **Reliance on Data Supplied by Others**—The appointed actuary may rely on data supplied by other persons. In doing so, the appointed actuary should disclose such reliance in the opinion. The accuracy and completeness of data supplied by others are the responsibility of those who supply the data. However, the appointed actuary should review the data for reasonableness and consistency to the extent practicable. For further guidance, the appointed actuary is directed to ASOP No. 23, *Data Quality*.
- 4.4 **Prescribed Statement of Actuarial Opinion**—The actuarial opinion described in section 4.1 is a prescribed statement of actuarial opinion as described in the *Qualification Standards for Prescribed Statements of Actuarial Opinion* promulgated by the American Academy of Actuaries. In addition, law, regulation, or accounting requirements may also apply to another actuarial communication prepared under this standard, and as a result, such other actuarial communication may be a prescribed statement of actuarial opinion.

- 4.5 Deviation from Standard—The actuary must be prepared to justify the use of any procedures that depart materially from those set forth in this standard and must include, in any actuarial communication disclosing the results of the procedures, an appropriate statement with respect to the nature, rationale, and effect of such departures.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

On plans of life insurance elected by the company, the National Association of Insurance Commissioners (NAIC) Valuation of Life Insurance Policies Model Regulation (*Model*) allows the use of *Model* select mortality factors to be applied to the 1980 CSO valuation tables for purposes of calculating deficiency reserves. The *Model* select mortality factors do not reflect the underwriting classes that have evolved since the period of underlying experience. In light of this consideration, the *Model* allows the appointed actuary to adjust the select factors via X factors to reflect anticipated mortality, without recognition of mortality improvement beyond the valuation date, taking into account relevant emerging experience. However, the *Model* requires the appointed actuary to opine annually that the adjusted mortality rates meet certain requirements set forth in the *Model*, and that such opinion be supported by an actuarial report, subject to appropriate actuarial standards of practice promulgated by the Actuarial Standards Board.

Current Practices

Although there is no established current practice for complying with the requirements of the *Model*, there are several current analytical procedures that the appointed actuary may find useful in developing and reviewing anticipated mortality.

Developing Anticipated Mortality

The process of using a company's relevant experience of the recent past to set an assumption for future mortality experience can, when the exposure is large enough, proceed by using the average level of the past experience, as modified by trend factors and known changes in the environment. But often the exposure may not be large enough, either because the company is small or because a small or newer segment of a large company is the subject of the assumption. In such cases, actuaries frequently turn to the experience of other companies or other segments (appropriately modified) to help set the assumption. Such procedures are specifically recommended for forming mortality assumptions to be used in testing sales illustrations, as specified in Actuarial Standard of Practice (ASOP) No. 24, *Compliance with the NAIC Life Insurance Illustrations Model Regulation*.

Often the appointed actuary finds it necessary to blend the experience from two or more sources in order to set the assumption. Sometimes a life actuary will consider the guidance, to the extent

relevant, set forth in ASOP No. 25, *Credibility Procedures Applicable to Accident and Health, Group Term Life, and Property/Casualty Coverages*, even though that standard is not specifically applicable to individual life actuarial practice.

For some purposes, such as selecting a valuation mortality rate that will stand up in the face of moderate future fluctuations in mortality, the appointed actuary may wish to select an X factor that yields a mortality rate higher than the appointed actuary's assumption for anticipated mortality, i.e., a level of assumed mortality that has a reasonably high probability of exceeding the actual mortality that may emerge in the future. To accomplish this, the appointed actuary needs an understanding of the underlying distribution of potential mortality results.

When mortality studies are based on lives or policies exposed, either the Normal distribution (with 35 or more deaths) or the Poisson distribution (with fewer than 35 deaths) can provide a satisfactory approximation of the distribution of deaths. However, neither of these approximations accounts for varying experience across different policy sizes.

Monte Carlo methods overcome concerns about whether the experience contains a large enough data set for the Poisson or Normal approximations to be sufficiently accurate, and are particularly useful for analyses that are based on amounts of insurance or units of insurance exposed. These methods produce results that converge to the underlying distribution given enough trials.

Assessment of Anticipated Mortality

There are several methods for analyzing the appropriateness of anticipated mortality in light of emerging company experience.

Hypothesis testing is one useful technique. The appointed actuary should be aware of two types of errors associated with hypothesis testing. A Type I error is the false rejection of a correct null hypothesis, while a Type II error is the failure to reject an incorrect null hypothesis. In terms of the *Model*, the null hypothesis would presumably state that anticipated mortality is consistent with emerging experience and would only be rejected if statistically significant data indicated otherwise. In this setting, the Type I error is a company increasing anticipated mortality when it is in fact adequate, while a Type II error is a company failing to increase anticipated mortality when it is in fact inadequate. The Type I error rate can be controlled by the choice of significance level. Type II error rates are largely beyond the control of the statistician and difficult to assess, but are influenced by the choice of significance level, the amount of data available, and the magnitude of the difference between the assumed and true values.

Another approach to analyzing anticipated mortality is to treat each review of the mortality assumption as if it were the original development of the mortality assumption, making use of the now more extensive experience base. For example, the appointed actuary could use the emerging experience, plus any other experience considered relevant, to set a new assumption, and use that, or a higher level based on selecting a high probability of adequacy, as the new assumption.

Credibility procedures are also available. Such procedures may be useful when blending data from two or more sources. By extension, credibility procedures may be useful for incorporating emerging experience into an existing body of experience.

This appendix does not provide an exhaustive list of possible approaches to analyzing anticipated mortality. Actuarial literature and other sources of information provide specific guidance to the appointed actuary on various analyses that may be useful in analyzing anticipated mortality. The appointed actuary should be aware of the limitations of applying any statistical procedure to a body of data. The appointed actuary should use reasonable judgment and consider modifying the X factors if the level of emerging mortality experience is substantially greater than expected, regardless of whether the anticipated mortality for the X factor class is deemed acceptable through statistical testing. As current practices evolve, the appointed actuary should consider whether the techniques used in prior analyses continue to be appropriate or can be improved.

Appendix 2

Comments on the Second Exposure Draft and Task Force Responses

The second exposure draft of this actuarial standard of practice was issued in June 2000, with a comment deadline of October 15, 2000. (Copies of the exposure draft and second exposure draft are available from the ASB office.) Four comment letters were received. The Task Force on XXX Regulation of the Life Committee of the ASB carefully considered all comments received. Summarized below, printed in standard type, are the significant issues and questions contained in the comment letters. The task force's responses to these issues and questions appear in **boldface**.

Section 3. Analysis of Issues and Recommended Practices

Section 3.4, Creation of X Factor Classes—One commentator found the additional language in this section regarding reinsurance to be helpful, clear, and provided uniformity of application, while another commentator believed further clarification was necessary. **The task force added clarification with respect to reinsurance.**

Section 3.5.2, Deriving Anticipated Mortality—One commentator believed that a reference in this section to ASOP No. 25, *Credibility Procedures Applicable to Accident and Health, Group Term Life, and Property/Casualty Coverages*, would be appropriate. **The task force disagreed, based on the fact that ASOP No. 25 is not specifically applicable to life insurance. ASOP No. 25 is mentioned in appendix 1.**

One commentator felt that clarification is needed with respect to experience refunds and other adjustments under reinsurance agreements. **The task force agreed and provided clarification at the end of section 3.5.2.**

Section 3.6, Periodic Assessment of Anticipated Mortality—One commentator made a general comment about the need to apply actuarial judgment when evaluating the anticipated mortality assumption. **Although this is a general statement, the task force changed the second sentence in the first paragraph to clarify that the appointed actuary is making a decision whether to continue using the existing anticipated mortality assumption.**

Appendix 1. Background and Current Practices

One commentator noted that cautionary language was part of the discussion of hypothesis testing but not used in the discussion of other possible approaches for analyzing anticipated mortality. This commentator also mentioned that the appointed actuary needs to use professional judgment regarding methods and data. **The task force agrees with these comments. The cautionary language was rewritten and moved from the hypothesis testing discussion to the last paragraph of this appendix. At the same time, the task force made some additional wording changes to provide more consistency and readability with respect to the terminology used in the appendix.**



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 42**

Determining Health and Disability Liabilities Other Than Liabilities for Incurred Claims

**Developed by the
Health Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
March 2004**

(Doc. No. 091)

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March 2004

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Determining Health and Disability Liabilities Other Than Liabilities for Incurred Claims

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 42

This booklet contains the final version of ASOP No. 42, *Determining Health and Disability Liabilities Other Than Liabilities for Incurred Claims*.

Background

ASOP No. 5, *Incurred Health and Disability Claims*, specifically excluded liability items other than incurred claims, such as contract reserves, premium deficiency reserves, claim settlement expense reserves, and various reserves related to provider contracts.

This ASOP has been developed to provide guidance to actuaries regarding determination of these other liabilities. The Health Committee and the ASB determined that it is more appropriate to address these items in this standard, rather than in ASOP No. 5, because they are more diverse than claim liabilities.

The Health Committee believes that the practice of actuaries varies widely and that there may be significant differences of opinion regarding generally accepted actuarial practice for actuaries involved in determining liabilities other than incurred health and disability claims. The committee believes that this actuarial standard of practice is necessary to provide guidance on the areas of analysis that actuaries should consider. The standard is not meant to be prescriptive of specific methods or procedures, nor is it intended to require in and of itself that specific liabilities be established.

First Exposure Draft

The first exposure draft of this ASOP, then titled *Determining Health and Disability Liabilities Other Than for Incurred Claims*, was issued in June 2002 with a comment deadline of December 15, 2002. Twenty-five comment letters were received and considered in developing modifications that were reflected in the second exposure draft.

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Second Exposure Draft

The second exposure draft of this ASOP was approved for exposure in October 2003 with a comment deadline of January 31, 2004. Seventeen comment letters were received and considered in developing the final standard. These letters showed thoughtful insight of the issues and were considered in developing the final standard of practice. A summary of the substantive issues contained in the second exposure draft comment letters and the Health Committee's responses are provided in appendix 2.

The most significant changes from the second exposure draft were as follows:

1. Several commentators pointed out that the standard might be considered to apply to the work of actuaries on health benefits provided under pension plans and other retiree benefit plans and to certain self-insured plans. The Health Committee does not intend that this standard apply when such work is covered by another standard of practice, and added language to section 1.2, Scope, to address the issue. The Health Committee does not intend for this standard to apply to actuarial work on medical or disability benefits provided under pension plans, or to calculations for SFAS No. 106, *Employers' Accounting for Postretirement Benefits Other Than Pensions*, or SFAS No. 112, *Employers' Accounting for Postemployment Benefits*, where the determination of a liability is subject to another ASOP. The committee does intend that this standard apply to self-insured health benefit plans in the same manner as ASOP No. 5, *Incurred Health and Disability Claims*, with respect to the determination of liabilities. For these plans, the standard applies only to the determination of the liabilities and not to the funding of the plans.
2. The Health Committee made some modifications to clarify further that this standard is not intended to require that certain liabilities be established, but rather provides guidance to the actuary if those liabilities are established. Similarly, language related to follow-up studies was modified to clarify that such studies are not required by this standard.

The Health Committee would like to thank all those who commented on both exposure drafts.

The Health Committee would also like to thank Steven J. Abood, Michael S. Abroe, Janet M. Carstens, Robert B. Cumming, and David F. Ogden for their contribution to the development of this ASOP.

The ASB voted in March 2004 to adopt this standard.

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Health Committee of the ASB

Alan D. Ford, Chairperson

Gary L. Brace	John M. Friesen
Robert G. Cosway	Mary J. Murley
Paul R. Fleischacker	John W.C. Stark

Actuarial Standards Board

Michael A. LaMonica, Chairperson

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Ken W. Hartwell	Lawrence J. Sher
Lew H. Nathan	Karen F. Terry
Godfrey Perrott	William C. Weller

ACTUARIAL STANDARD OF PRACTICE NO. 42

**DETERMINING HEALTH AND DISABILITY
LIABILITIES OTHER THAN LIABILITIES FOR INCURRED CLAIMS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries determining health and disability liabilities other than liabilities for incurred claims. This ASOP complements ASOP No. 5, *Incurred Health and Disability Claims*.
- 1.2 **Scope**—This standard applies to actuaries when performing professional services in connection with determining health and disability liabilities, other than liabilities for incurred claims, associated with a health benefit plan, as defined in section 2.7 of this standard, or a risk-sharing arrangement, as defined in section 2.13 of this standard. Such liabilities are described in sections 3.3–3.7, and include contract reserves, premium deficiency reserves, provider-related liabilities, claim adjustment expense liabilities, and other liabilities of insurance entities, insured or noninsured risk-assuming entities, managed care entities, health care providers, government-sponsored health benefit plans, or risk contracts. This standard also applies to actuaries determining liabilities for self-insured plans (including voluntary employees' beneficiary association (VEBA) plans) that are not subject to other standards such as those referenced below.

This standard does not apply when such liabilities are determined in accordance with other ASOPs, such as ASOP No. 4, *Measuring Pension Obligations*, and ASOP No. 6, *Measuring Retiree Group Benefit Obligations*. Furthermore, this standard does not apply in situations where a benefit is included within a plan subject to another standard, such as a disability benefit under a life plan or a 401(h) account that is part of a pension plan.

Liabilities may be determined for purposes of financial reports, claims studies, ratemaking, or other actuarial communications. This standard does not interpret statutory or generally accepted accounting principles.

Throughout this standard, any reference to determining liability includes establishing or reviewing the liability.

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When applicable law, regulation, or other binding authority conflicts with this standard, compliance with such law, regulation, or other binding authority shall not be deemed a deviation from this standard, provided the actuary discloses that the actuarial work was performed in accordance with the requirements of such law, regulation, or other binding authority.

- 1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 Effective Date—This standard will be effective for all actuarial work involving health and disability liabilities, other than liabilities for incurred claims, performed on or after September 30, 2004.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 Block of Business—All contracts of a common coverage type, demographic grouping, contract type, or other segmentation useful for estimating liabilities for actuarial purposes, or useful to a risk-assuming entity for evaluating its business.
- 2.2 Capitation Arrangement—An arrangement that calls for periodic payments to a provider to cover specified services to certain members of a health benefit plan regardless of the number or types of such services provided.
- 2.3 Carve-Outs—Carve-outs are designated services provided by specified providers, such as prescription drugs or dental, or condition-specific services such as cancer, mental health, or substance abuse treatment. Carve-outs are often provided by a separate entity specializing in that type of designated service.
- 2.4 Contract Period—The time period for which a contract is effective.
- 2.5 Contract Reserve—A liability established when a portion of the premium due prior to the valuation date is designed to pay all or a part of the claims expected to be incurred after the valuation date (sometimes referred to as an *active life reserve* or *policy reserve*). A contract reserve may or may not include a provision for the reserve for unearned premiums.

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- 2.6 Exposure Unit—A unit by which the cost for a health benefit plan is measured. For example, an exposure unit may be a contract, an individual covered, \$100 of weekly salary, or \$100 of monthly benefit.
- 2.7 Health Benefit Plan—A contract or other financial arrangement providing medical, prescription drug, dental, vision, disability income, accidental death and dismemberment, long-term care, or other health-related benefits, whether on a reimbursement, indemnity, or service benefit basis, regardless of the form of the risk-assuming entity, including health benefit plans provided by self-insured or governmental plan sponsors.
- 2.8 Incentive Payment—A bonus payment to a provider, typically used to motivate efficiency or quality in patient care management, or to encourage retention of providers in a network.
- 2.9 Premium Deficiency Reserve—A liability established when, for a period of time, the value of future premiums, current reserves, and unpaid claims liability are less than the value of future claim payments and expenses plus the anticipated liabilities at the end of the period.
- 2.10 Providers—Individuals, groups, or organizations providing health care services, including doctors, hospitals, physical therapists, medical equipment suppliers, etc.
- 2.11 Provider-Related Liability—A liability established to cover expected future incentive or non-claim payments or to cover the possibility of a change in the relationship between the risk-assuming entity and a provider.
- 2.12 Risk-Assuming Entity—The entity with respect to which the actuary is determining liabilities associated with health benefit plans or risk-sharing arrangements.
- 2.13 Risk-Sharing Arrangement—An arrangement involving a provider, calling for payments to or from the provider where the payment is not related to a specific service performed by that provider, and the payment is contingent upon certain financial or operational goals being achieved. Examples of risk-sharing arrangements include provider incentives, bonuses, and withholds.
- 2.14 Trends—Measures of rates of change, over time, of the elements affecting the determination of certain liabilities.
- 2.15 Unpaid Claims Liability—The value of the unpaid portion of incurred claims includes (a) unreported claims; (b) reported but unprocessed claims; and (c) processed but unpaid claims. For a risk-assuming entity's balance sheet, the unpaid claims liability includes provision for all unpaid claims incurred during the contract period as of the current valuation date.
- 2.16 Valuation Date—The date as of which the liabilities are determined.

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Section 3. Analysis of Issues and Recommended Practices

- 3.1 Introduction—The determination of liabilities is fundamental to the practice of health actuaries. It is necessary for the completion of financial statements; for the analysis and projection of claim trends; for the analysis or development of premium rates; and for the development of various management reports, regardless of the type of risk-assuming entity.
- 3.2 General Considerations—When determining liabilities under this standard, the actuary should consider relevant provisions of the health benefit plans or risk-sharing arrangements, business practices, and environmental factors that, in the actuary's professional judgment, are likely to materially affect liabilities or claim trends, including those highlighted in the sections below.

When, in the actuary's professional judgment, a representation from management is reasonable and management is an appropriate source of information about a specific item, the actuary may rely on the representation of management with respect to such item. The actuary should disclose such reliance in an appropriate actuarial communication.

- 3.2.1 Health Benefit Plan Provisions and Business Practices—The actuary should consider the health benefit plan provisions, including any special practices known to the actuary that are imposed by group requirements and provider arrangements and which, in the actuary's professional judgment, materially affect the cost and frequency of claims; the level and schedule of premium rates; the ability to change premium rates; and renewability provisions. These include, for example, elimination periods, deductibles, pre-existing condition limitations, maximum service payment allowances, and managed-care restrictions.

The actuary should compare internal business practices, as described by an appropriate source, to plan provisions to determine whether there are material differences between the plan provisions and actual operation of the plan, such as differences in definitions of payment allowances, incurral dating methods, and benefit interpretations, and consider how such differences are likely to affect the determination of claim costs and claim liabilities.

- 3.2.2 Risk-Sharing Arrangement Provisions—The actuary should consider the risk-sharing arrangement provisions, including any special requirements for networks or providers, which are known to the actuary and, in the actuary's professional judgment, are likely to materially affect the financial results of the arrangement. These include, for example, allowances for number of enrolled lives included, the results of membership satisfaction surveys, and actual usage of certain facilities. The actual payments may be defined by internal business practices, contracts, and plan provisions.

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- 3.2.3 Economic Influences—Economic conditions may affect the frequency and cost of claims. The actuary should consider such factors as changes in expected trends, managed-care contracts, provider networks, provider fee schedules, and medical practices to the extent such changes, in the actuary's professional judgment, are material individually or in the aggregate. In addition, economic conditions may influence such factors as continuation of disability, cost shifting, and frequency of elective procedures performed in recessionary periods or prior to plan termination.
- 3.2.4 Risk Characteristics and Organizational Practices by Block of Business—The actuary should consider how marketing, underwriting, and other business practices can influence the types of risks accepted. Furthermore, the pattern of growth or contraction and relative maturity of a block of business can influence liabilities. Claims administration practices can influence claim rates and trends and in turn influence liabilities.
- 3.2.5 Legislative Requirements—Governmental mandates can influence the provision of new benefits, risk characteristics, care management practices, rating and underwriting practices, or claims processing practices. The actuary should consider relevant legislative and regulatory changes as they pertain to determination of liabilities.
- 3.2.6 Carve-Outs—The actuary should consider the pertinent benefits, payment arrangements, and separate reporting of those benefits subject to carve-outs in trend analysis and determination of a risk-assuming entity's liabilities.
- 3.2.7 Special Considerations for Long-Term Products—Certain health benefit plans provide for long-term medical or disability benefits. Some examples are cancer, long-term care, and long-term disability policies. The actuary should consider the benefits available in these health benefit plans, such as lump-sum, fixed, or variable payments for services; provisions such as cost of living adjustments and inflation protections; payment differences based on institutional or home-based care; social insurance integration; and the criteria for benefit eligibility.
- 3.2.8 Reinsurance Arrangements—The actuary should appropriately reflect the effect of reinsurance arrangements in determining liabilities. In particular, the actuary should take into account the extended reporting or recovery periods and delayed collectibility often associated with certain types of reinsurance.
- 3.2.9 Expenses—The actuary should consider whether an explicit liability for expenses should be established, or whether a particular liability implicitly provides for future expenses.

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- 3.2.10 Consistency of Bases—The actuary should use consistent bases for determining related liabilities and reserves, including those not covered by this standard, such as incurred health and disability claims, unless it would be inappropriate to do so.
- 3.3 Considerations for Determining Contract Reserves—The actuary should establish a contract reserve when such a reserve is required. For example, contract reserves are typically established for entry-age-rated health benefit plans (where premium rates are based on entry age and may be level over the lifetime of the contract), or where flat premium rate guarantees or premium rate change limitations apply for multiple-year periods. The actuary may perform the valuation on a seriatim basis, using grouping techniques, or a combination of both. When determining contract reserves, the actuary should consider the following:
- 3.3.1 Assumptions—The actuary should use assumptions that are reasonable in the aggregate. The actuary should take into account the following assumptions and any other assumptions that the actuary deems appropriate:
- a. Interest Rates—The actuary should use interest rates in the present value calculation that are reasonable and consistent with the purpose for which the reserve is being calculated.
 - b. Morbidity—The actuary should use morbidity assumptions that reflect the underlying risk. These assumptions may reflect factors such as age, gender, and marital status of the insured as well as the elimination period and dependent status. In addition, the actuary should take into account the wearing away of durational effects such as risk selection and pre-existing condition limitations, changes in health benefit plans, changes in provider agreements, adverse selection due to premium rate increases and plan design, and other factors that, in the actuary's professional judgment, materially affect future claim payments. The impact of these items may be recognized by a set of assumptions that varies over time.
 - c. Persistency—The actuary should consider using persistency or termination assumptions that include both involuntary terminations, such as deaths and disablements and voluntary terminations, as appropriate. Voluntary termination assumptions, if any, should reflect the expected impact of future premium rate increases.
 - d. Expenses—The actuary should consider whether an assumption is appropriate for expenses such as maintenance, acquisition, and claim settlement, depending on the purpose for which the reserve is being calculated.

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- e. **Trend**—The actuary should consider trend assumptions for inflation, utilization, morbidity, and expense rates that are consistent with the purpose for which the reserve is being calculated.
- 3.3.2 **Premium Rate Changes**—The actuary should consider whether an assumption may be appropriate to reflect premium rate changes in the reserve calculation. The actuary should use a premium rate change assumption that is reasonable in relation to the projected claims costs and the manner in which the rate change will be implemented (for example, on a given date for an entire block of business or on the next policy anniversary). This assumption should take into account factors such as market conditions, regulatory restrictions, and rate guarantees.
- 3.3.3 **Previously Established Assumptions for Contract Reserves**—The actuary may determine that previously established assumptions are not appropriate and may change them in accordance with the standards of the financial statements in which the reserves are reported. The actuary should follow the process set forth in section 3.3.1 when establishing new contract reserve assumptions for future valuation dates.
- 3.3.4 **Valuation Method**—For a new policy form, in addition to the assumptions discussed above, the actuary may need to determine the valuation method. The most common valuation methods are the gross premium method, the net level premium method and the full preliminary term (one- or two-year) method. Except where the valuation method is prescribed, the actuary should choose an appropriate method for the intended use of the reserve, such as in statutory financial statements or analysis of operating income. When not using a net level premium method, the actuary should consider the expense structure, such as higher first-year costs, in selecting the valuation method.
- 3.4 **Considerations for Determining Premium Deficiency Reserves**—The actuary should establish a premium deficiency reserve when such a reserve is required. Premium deficiency reserves are typically established for financial reporting purposes. They may also be established for other purposes such as management reporting. The actuary commonly performs a gross premium valuation in order to determine whether or not a deficiency exists.
 - 3.4.1 **General Considerations**—When determining deficiency reserves, the actuary should take into account the following:
 - a. **Assumptions in the Aggregate**—The actuary should use assumptions that are reasonable in the aggregate.
 - b. **Exposure**—The actuary should consider reasonable increases and decreases in exposure units over the time period of the calculation in the premium

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deficiency reserve calculation. This parameter should reflect changes due to such factors as mortality, lapses, and the impact of expected premium rate changes.

- c. **Premium Rate Changes**—The actuary should use a premium rate change assumption that is reasonable in relation to the projected claims costs and the risk-assuming entity's expectations. This assumption should take into account factors such as market conditions, regulatory restrictions, and rate guarantees.
- d. **Claim Trend**—The actuary should take into account the wearing away of durational effects such as risk selection and pre-existing condition limitations, changes in provider agreements, adverse selection due to premium rate increases and plan design, and other factors that affect future claim payments.
- e. **Risk-Sharing Arrangements**—The actuary should take into account risk-sharing arrangements. If the actuary anticipates there will be a payout for risk-sharing arrangements associated with a block of business that is being tested for premium deficiency, the actuary should treat the amount of the payout as an expense. Some of these arrangements require providers to share in losses as well as gains. If such an agreement is in effect and the actuary anticipates there will be losses associated with the block of business being tested, the actuary should include the amount due from the providers to offset the losses only to the extent that the actuary reasonably expects the amount due to be collectible.
- f. **Interest Rates**—The actuary should use interest rates in the present value calculation that are reasonable and consistent with the purpose for which the reserve is being calculated.
- g. **Reinsurance**—The actuary should consider the expected effects of reinsurance and changes in reinsurance premiums in determining the premium deficiency reserve.
- h. **Taxes**—The actuary should consider the effect of losses assumed in the calculation of the premium deficiency reserve on the risk-assuming entity's taxes and may include a tax credit in the calculations where appropriate.
- i. **Expenses**—The actuary should consider total expenses of the risk-assuming entity in establishing a premium deficiency reserve and should consider whether the expenses allocated to the block of business are reasonable for the purpose of determining premium deficiency reserves.

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3.4.2 Additional Considerations for Financial Reporting—When determining premium deficiency reserves for financial reporting, the actuary should consider the following:

- a. **Blocks of Business**—In order to determine whether or not a premium deficiency exists, the actuary should consider blocks of business in a manner consistent with applicable financial reporting requirements. The characteristics of a block of business may include, but are not limited to, benefit type (for example, major medical, preferred provider organization, or capitated managed care), contract type (for example, group or individual policies), demographic grouping (for example, group size or geographical area), and length of rate guarantee period. Whatever criteria are used, a block of business should be large enough so that its financial results are material relative to the risk-assuming entity as a whole. The actuary may need to establish a premium deficiency reserve for a block of business where a premium deficiency exists even if the contract period has not started.
- b. **Time Period**—The actuary should take into account any applicable law, regulation, or other binding authority in establishing the time period of the calculation. The valuation date is the beginning of the time period used to project losses from a block of business. The end of the time period is generally the earlier of the end of the contract period or the point at which the block no longer requires a premium deficiency reserve.

3.5 Considerations When Determining Provider-Related Liabilities—Provider-related liabilities may arise for a risk-assuming entity as a provider or a non-provider. Risk-sharing arrangements create potential liabilities for both parties while provider incentive payments create potential liability to the risk-assuming entity offering such provisions to their providers. Finally, capitation arrangements may create a provider-related liability for either party. When determining provider-related liabilities, the actuary should consider the following:

3.5.1 Non-Provider Risk-Assuming Entities—The actuary should consider the relevant contractual arrangements with providers to determine whether the contractual arrangements require a liability to be held by the risk-assuming entity.

The actuary should consider whether a provider-related liability for contracts in effect or not fully settled as of the valuation date should be determined. In determining the liability, the actuary should consider any amounts due from the provider, the overall financial condition of the provider, and the likelihood of collecting amounts due.

Similarly, the actuary should consider whether the risk of a provider failing or leaving a network creates a need to determine a liability for the contingency of the

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payment by the risk-assuming entity of higher capitations or fees for services while a replacement provider is identified and suitable arrangements are concluded.

- 3.5.2 Provider Risk-Assuming Entities—The actuary should consider relevant contractual arrangements with other providers as well as non-provider risk-assuming entities to determine whether the contractual arrangements require a liability to be held. One primary source of potential liability between providers is the receipt of capitation by one provider with payments due to other providers using fee-for-service.
- 3.5.3 Risk-Sharing and Capitation Arrangements—The actuary should consider the nature of any risk-sharing and capitation arrangements in determining whether to establish a provider-related liability. The actuary should consider stop-loss provisions, if any, included in the risk sharing or capitation arrangements when establishing a provider-related liability.
- 3.5.4 Provider Financial Condition—When a risk-assuming entity shares risk with a provider under a risk-sharing or capitation arrangement, the actuary should determine, to the extent practical, whether the provider's overall financial condition will allow it to meet its obligations, and, if not, adjust the liability accordingly. To the extent that these liabilities are not otherwise included in the claim liabilities of the risk-assuming entity, such liabilities should be included in the provider-related liabilities.
- 3.5.5 Provider Incentive Payments—If a provider agreement calls for incentive payments to be made to a provider if certain conditions are met, such as quality of care standards or claim targets, the actuary should consider whether the risk-assuming entity should hold a liability for those payments.
- 3.6 Claim Adjustment Expense Liabilities—The actuary should determine a liability for claim adjustment expenses associated with unpaid claims, unless such liabilities are included in the liability for unpaid claims or otherwise provided for appropriately.
- 3.7 Other Liabilities—The actuary may not always be responsible for determining certain other liabilities. However, the actuary may be asked to assist in the determination of or opine on the adequacy of certain of these other liabilities. The following are examples of such liabilities:
 - 3.7.1 Liabilities for Payments to State Pools—When involved in determining liabilities for payments to state pools, the actuary should consider whether adequate provision has been made for payments due under state assessment pools, such as insolvency pools, risk-sharing pools, or other arrangements.

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- 3.7.2 Reserves for Unearned Premiums—When involved in determining reserves for unearned premiums, the actuary should consider whether adequate provision has been made for liabilities associated with coverage during the period when the premium will be earned.
- 3.7.3 Liabilities for Dividends and Experience Refunds—When involved in determining liabilities for dividends and experience refunds, the actuary should consider whether adequate provision has been made for dividends or experience refunds payable under the provisions of a health benefit plan.
- 3.8 Follow-Up Studies—The actuary may be called upon to conduct follow-up studies that involve performing tests of reasonableness of the prior period liability estimates and the methods used over time. When conducting such follow-up studies, the actuary should, to the extent practical, do the following:
- a. collect sufficient data to perform such studies;
 - b. perform studies in the aggregate or for appropriate blocks of business; and
 - c. utilize the results, if appropriate, in preparing current liability estimates.
- 3.9 Margin for Uncertainty—Recognizing the fact that liabilities are an estimate of the true liabilities that will emerge, the actuary should consider what margin for uncertainty, if any, might be appropriately included.
- 3.10 Data Requirements—The expansion of health benefit coverages and the variety of organizations offering health benefit coverages have increased the volume, type, detail, and the frequency of data needs by the actuary. The actuary should refer to ASOP No. 23, *Data Quality*, when dealing with data requirements.
- 3.11 Documentation—The actuary should document the methods, assumptions, procedures, and the sources of the data used. The documentation should be in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary's work.

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Section 4. Communications and Disclosures

- 4.1 Communications and Disclosures—When issuing actuarial communications under this standard, the actuary should refer to ASOP No. 41, *Actuarial Communications*. In particular, such actuarial communications should disclose the following items:
- a. the sources of information;
 - b. the extent of reliance on information supplied by others;
 - c. limitations on the use of the actuarial work product;
 - d. the need for any follow-up studies;
 - e. any unresolved concerns the actuary may have about the information that could have a material effect on the actuarial work product; and
 - f. any conflicts arising from the application of law, regulation, or other binding authority.
- 4.2 Reliance on Others—The actuary may rely on information, including data, supplied by others. In doing so, the actuary should disclose both the fact and the extent of such reliance in an appropriate actuarial communication. The accuracy and comprehensiveness of the information are the responsibility of those who supply it.
- 4.3 Prescribed Statement of Actuarial Opinion—This ASOP does not require a prescribed statement of actuarial opinion as described in the *Qualification Standards for Prescribed Statements of Actuarial Opinion* promulgated by the American Academy of Actuaries. However, law, regulation, or accounting requirements may also apply to an actuarial communication prepared under this standard, and as a result, such actuarial communication may be a prescribed statement of actuarial opinion.
- 4.4 Deviation from Standard—An actuary must be prepared to justify the use of any procedures that depart materially from those set forth in this standard and must include, in any actuarial communication disclosing the results of the procedures, an appropriate statement with respect to the nature, rationale, and effect of such departures.

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Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

Health and disability liabilities other than incurred claims are important to many lines of health and disability business. New forms of these liabilities arose during the 1980s and especially the 1990s with the rapid increase in managed care provider risk arrangements. The increasing attention to financial statements has enhanced the importance of other liabilities such as contract reserves and premium deficiency reserves.

Current Practices

Actuaries have been able to obtain guidance on when statutory reserves are required, how to reserve for health coverages and how to document those reserves from various publications of the National Association of Insurance Commissioners. The primary publications are the Accounting Practices and Procedures Manual, the Health Insurance Reserves Model Regulation and the Health Reserves Guidance Manual. Similar guidance on when liabilities are required by generally accepted accounting principles is available in Statements of Financial Accounting Standards. Determining liabilities may be necessary or useful in situations other than financial statement reporting, such as the acquisition of a block of a business or in experience analysis.

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Appendix 2

Comments on the Second Exposure Draft and Committee Responses

The second exposure draft of this standard, *Determining Health and Disability Liabilities Other Than Liabilities for Incurred Claims*, was exposed for review in October 2003, with a comment deadline of January 31, 2004. Seventeen comment letters were received. The Health Committee of the ASB carefully considered all comments received. Many helpful ideas and suggestions were offered in the comment letters and are reflected in the standard as appropriate. Summarized below are the significant issues and questions contained in the comment letters, and the committee's responses to these issues and questions. Unless otherwise noted, the section numbers and titles used below refer to those in the second exposure draft.

GENERAL COMMENTS	
Comment	One commentator observed that the term "liability" appeared to be used synonymously with the term "reserve." The commentator suggested a number of changes throughout the standard to reflect this comment.
Response	The committee believes that the use of the term "liability" is appropriate and is reflective of common usage. Where the term "reserve" is used, it applies to a specific terminology recognized in regulation and practice, such as "premium deficiency reserve," "contract reserve," or "unearned premium reserve."
Comment	Several commentators questioned whether this standard was intended to cover situations such as disability and medical benefits provided through pension plans, benefits provided through voluntary employees' beneficiary association's (VEBAs), calculations under SFAS No. 106, <i>Employers' Accounting for Postretirement Benefits Other Than Pensions</i> , and SFAS No. 112, <i>Employers' Accounting for Postemployment Benefits</i> , 401(h) accounts, and incidental health benefits provided under other plans.
Response	The committee considered these questions and added clarifying language to section 1.2, Scope, which states that this standard does not apply to actuaries determining liabilities in accordance with other standards of practice. This standard does not apply for liabilities determined in accordance with standards of practice such as ASOP No. 4, <i>Measuring Pension Obligations</i> , and ASOP No. 6, <i>Measuring Retiree Group Benefit Obligations</i> . Furthermore, this standard does not apply in situations where a benefit is included within a plan subject to another standard, which may include a disability benefit under a life plan, or to a 401(h) account that is part of a pension plan. The committee believes that this standard does apply to self-insured plans (including VEBA plans) that are not subject to other standards such as those referenced above. This is specifically noted in the definition of health benefit plan, and is identical to the treatment of ASOP No. 5, <i>Incurred Health and Disability Claims</i> .
Comment	One commentator observed that the standard uses the term "premium" frequently, and also uses the term "policy form," and asked whether the standard was to apply to non-insured arrangements.
Response	The standard does apply to certain self-insured health plans, and the committee believes that the terms noted by the commentator are appropriate.
Comment	One commentator observed that contract reserves are merely a special case reserve that is defined at issue and cannot be subsequently recalculated unless shown to be inadequate. The commentator suggested a number of changes to the definition of contract reserve and the assumptions to be used.
Response	The committee believes that the standard provides appropriate flexibility to the actuary, and that any further descriptive definition would be prescriptive and limiting.

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SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.1, Purpose	
Comment	One commentator suggested that adding, “This ASOP is not intended to be prescriptive of specific methods or procedures, nor is it intended to require that specific liabilities can be established,” would clarify the intent of the section.
Response	The committee believed the existing language was appropriate and made no change.
Section 1.2, Scope	
Comment	One commentator suggested changing, “This standard applies to actuaries when they...” to “This standard applies when actuaries....”
Response	The committee believed the existing language was appropriate and made no change.
Comment	One commentator suggested deleting everything starting with “provided the actuary discloses....”
Response	The committee disagreed, and believed the existing language was appropriate.
Comment	One commentator suggested that this section could be taken to mean this standard does not apply to work performed for statutory or GAAP reporting.
Response	The committee confirms that the standard does apply to work performed for statutory or GAAP reports, and believed the language was sufficiently clear.
Comment	One commentator suggested that the language detailing the meaning of “determining” may more logically fit in section 2, Definitions.
Response	The committee believed this sentence was appropriately included in section 1.2, Scope.
SECTION 2. DEFINITIONS	
Comment	One commentator suggested that the ASOP define “incurred claims.”
Response	The committee believed this term was of common usage and did not need further definition for purposes of this standard.
Section 2.4, Contract Period	
Comment	One commentator suggested the phrase “contract is effective” should be replaced with “coverage is effective.”
Response	The committee believed the existing definition was appropriate and made no change.
Section 2.5, Contract Reserve	
Comment	<p>One commentator suggested that the definition of contract reserve and section 3.3, Considerations for Contract Reserves, were either wrong or poorly worded. Specifically, the commentator believed that the statement did not adequately address the difference between a contract reserve and a premium deficiency reserve. The commentator believed that contract reserves are a special case of premium deficiency reserve, even though the actuarial language has not evolved in this way. Contract reserves are created by the difference in slope in premiums over time relative to the slope of the claims. Only in the NAIC statutory reserve model laws is the term actually defined.</p> <p>The ASOP as drafted, unfortunately, gave so much more latitude to the actuary in calculating the reserve, and even defining what the liability is, as not to make it very valuable in practice.</p> <p>In summary, a contract reserve is nothing more than a special case reserve that is defined at time of issue, and cannot be recalculated for changes in future periods, unless a gross premium reserve calculation shows an inadequacy. Even in that case, one can argue the contract reserve stays the same, and an additional reserve is put up as a deficiency reserve. The definitions should reflect this, as should the entire standard.</p>

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Response	<p>The committee notes that this ASOP does not supersede existing GAAP or statutory requirements, and that the actuary should comply with these requirements. The committee believed that contract reserves are not unique in that their determination is based solely on benefit and does not consider expenses. This ASOP is not intended to prescribe how the actuary should so comply, and is intended to provide guidance on what the actuary should consider in determining liabilities. Further, the committee believed these aspects of the definitions of contract reserves and premium deficiency reserves in the ASOP were sufficiently clear for the purpose of providing such general guidance.</p> <p>The committee did clarify that a contract reserve may or may not include a provision for an unearned premium reserve in response to a comment on section 3.7.2.</p>
Section 2.9, Premium Deficiency Reserve	
Comment	One commentator suggested that the definition should be changed to “when, for the remainder of the contract, the value of future premiums....”
Response	The committee believed the existing language was appropriate and made no change.
Section 2.12, Risk-Assuming Entity	
Comment	One commentator suggested that this definition should be more specific. There are situations in which the entity for which the actuary’s work is being performed is not the risk-assuming entity (for example, when the work is an analysis of a potential acquisition or an analysis performed for a regulatory agency). This would be especially true when the actuary is evaluating the adequacy of the reserves of a risk-assuming entity.
Response	The committee modified the language for clarification.
Section 2.13, Risk-Sharing Arrangement	
Comment	One commentator suggested that the words “related to a specific service” be replaced by “directly for a specific service” or “associated with a specific service” because risk sharing arrangements are “related to” (the aggregate of) all specific services.
Response	The committee believed the existing language was appropriate and made no change.
Section 2.14, Trends	
Comment	One commentator suggested changing “of the elements affecting the determination of certain liabilities” to “of certain elements affecting the determination of liabilities.”
Response	The committee believed the existing language was appropriate and made no change.
Section 2.15, Unpaid Claims Liability	
Comment	One commentator suggested that many of the ASOPs are inconsistent in the use of the term claim liability. In the definition of “unpaid claims liability,” the phrase “unpaid portion of incurred claims” could be construed to mean future benefits on incurred claims. It might help to clarify the language by referring to the “due and unpaid” portion of incurred claims.
Response	The committee believed the existing language was appropriate and made no change.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.2, General Considerations	
Comment	One commentator suggested removing “or claim trends” as they are one of several environmental factors that can affect liabilities.
Response	The committee did not make a change, as claim trends may be a significant source of the need to establish a liability.

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Comment	One commentator suggested deleting wording that suggests a need to determine if “management is an appropriate source of information about a specific item,” as well as disclosure of reliance in this section.
Response	The committee believed that there may be situations where management may not be the best source (for example, where certain types of health benefit plans are handled by a separate TPA), and it is appropriate for the actuary to consider the appropriateness of each source. While disclosure requirements are consolidated in section 4, ASOPs may note them in other sections as well.
Section 3.2.1, Health Benefit Plan Provisions and Business Practices	
Comment	One commentator suggested revising the third sentence to clarify that the actuary is to consider “material differences between the plan provisions and actual operation of the plan,” and noted that the remainder of the sentence contains examples, such as differences in definitions of payment allowances, etc.
Response	The committee agreed and made the proposed change.
Comment	Another commentator suggested removing the last sentence, as it is included in ASOP No. 5.
Response	The committee believed the sentence was appropriate for this ASOP.
Section 3.2.3, Economic Influences	
Comment	One commentator suggested wording to clarify that “to the extent changes are material” should be a view of the future by changing to “to the extent such changes, in the actuary’s judgment, are likely to be material.”
Response	The committee agreed and made the proposed change.
Section 3.2.10, Consistency of Bases	
Comment	One commentator was concerned with a blanket requirement for consistency, and that immaterial differences may be interpreted as violating the standard.
Response	The committee believed that the language did not dictate that the assumptions be identical, and allowed for some differences.
Section 3.3.1, Assumptions	
Comment	One commentator expressed concern that contract reserve assumptions, which are changed at the time of acquisition of a block, might not reflect experience prior to the acquisition, and proposed adding a new second sentence to say that “assumptions used must be reasonable relative to the entire block or blocks of business from issue.”
Response	The committee believed that the existing first sentence requiring the use of “assumptions that are reasonable in the aggregate” would include the use of reasonable assumptions for prior periods and no change.
Comment	One commentator suggested adding additional examples of factors specific to disability plans in section 3.3.1(b).
Response	The committee did not feel additional examples were necessary.
Section 3.4, Considerations for Determining Premium Deficiency Reserves	
Comment	Several commentators suggested that the first sentence was not clear as to the basis for “when necessary.”
Response	The committee revised the wording in sections 3.4 and 3.3 to clarify the basis as an outside requirement. The next two sentences in 3.4 remain as the principal sources of an “outside requirement” on the actuary.
Section 3.4.1, General Considerations	
Comment	Regarding section 3.4.1(e), one commentator suggested that amounts due from providers would normally be considered a receivable from a non-insurance entity and, therefore, problematic.
Response	The committee made no change. It does understand that some receivables may have special rules applied to them under some financial reporting rules. The ASOP, being more general, recognizes the potential for value.

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Comment	Regarding section 3.4.1(h), one commentator expressed concern that the ASOP would not be consistent with the NAIC Health Reserves Guidance Manual.
Response	The committee believed that the existing language was appropriately broad and recognized that “applicable law, regulation or other binding authority” may be more restrictive.
Comment	Regarding section 3.4.1(i), one commentator noted that the treatment of expense allocation in calculating deficiency reserves is frequently different than for financial reporting in general and asked if the ASOP should address this.
Response	The committee agreed with the comment and added “for the purpose of determining premium deficiency reserves” at the end of this section.
Section 3.4.2, Additional Considerations for Financial Reporting	
Comment	Regarding section 3.4.2(a), one commentator suggested that certain blocks of business (for example, group conversions) are never intended (or allowed by law) to be profitable and that this would then require a premium deficiency reserve.
Response	The committee believed that defining a block of business will vary. If there are no other sources than the premiums, the policy form may need contract or additional reserves at issue. In some situations, other sources of revenue (for example, conversion charges) may be a source of funding such reserves. In some situations it may be appropriate to combine these forms into a larger block that is intended to support the unprofitable forms. The ASOP allows for reasonable approaches subject to applicable financial reporting requirements.
Comment	Regarding section 3.4.2(b), several commentators expressed concern that the time period language was not clear, especially with respect to the end of the period. Of particular concern were examples like conversion policies, blocks that “wander in and out of year-by-year profitability” and situations involving contracts committed to (new or renewal) by the risk-assuming entity that will result in a loss.
Response	The committee removed the wording requiring some level of profitability as the basis for the end of the period and revised the wording to clarify that the end of the period would normally be the date in the future, under the assumptions used to determine the reserve currently, when no premium deficiency reserve would then be required, including new business written at a loss. This will generally result from premium changes, increasing contract reserves or adding additional reserves or a combination. During such a period some portion of the block may be expected to produce profits before the entire block reaches the “end.” Expected profits during this period, but not later periods, are a reasonable offset to the reserve.
Section 3.5.1, Non-Provider Risk-Assuming Entities	
Comment	Several commentators expressed concern that the actuary may not have sufficient information to determine a liability relating to added costs following a provider failing or leaving a network. One suggested that the ASOP make it clear that “it is not the actuary’s responsibility to review the financial soundness” of providers. Others requested examples.
Response	The committee did not believe examples were appropriate for the ASOP but could be a part of a practice note. The committee did revise the language to require the actuary to “consider whether” there is a material risk relating to providers failing or leaving the network so that a liability should be determined. Such considerations would not normally involve the financial review of providers just for this purpose. Financial analyses of providers, if completed for other reasons, should be reviewed. The committee revised the prior paragraph to be consistent with this approach.

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Section 3.6, Claim Adjustment Expense Liabilities	
Comment	One commentator suggested that, in practice, the actuary may not determine this liability, and that in such situations this liability is similar to those in section 3.7 and should be moved there.
Response	The committee made no change but notes that the ASOP uses the word “determines” to encompass both determining and reviewing liabilities, and within this concept, the actuary is required to determine a value of the liability. The committee believed that the ASOP provided flexibility for the actuary, even if not the one to calculate the liability, to be satisfied that the liability is covered in accordance with the financial reporting rules applicable.
Comment	Another commentator questioned whether implicit approaches should be allowed.
Response	The committee believed that so long as the liability is determined, the manner of reporting should not be defined by the ASOP. No change was made.
Section 3.7, Other Liabilities	
Comment	Several commentators noted that certain of these liabilities may be included in the liabilities subject to an actuarial opinion. They were concerned that the language seemed to suggest that actuaries are not responsible.
Response	The committee agreed with this concern and revised the second sentence to provide for two reasons for the actuary to be involved—a request to assist or where the liability is subject to the actuary’s opinion.
Section 3.7.2, Reserves for Unearned Premiums	
Comment	One commentator noted that the definition of contract reserve would normally include the unearned premium reserve.
Response	The committee did not intend to include premiums for the balance of the contract year, as of the valuation date, in the basis for contract reserves. The committee intended to allow flexibility in the methodology of calculating contract reserves, such that the contract reserve can be calculated with or without the provision for unearned premiums. Section 2.5 was changed to reflect this. The committee believed that section 3.7.2 allowed the actuary to take this into account when determining reserves for unearned premiums.
Comment	One commentator asked how one could match future liabilities with unearned premium.
Response	The committee believed that the description of the unearned premium reserve was appropriate.
Section 3.7.3, Liabilities for Dividends and Experience Refunds	
Comment	One commentator asked if premium stabilization reserves were to be considered under this section.
Response	The standard would cover premium stabilization reserves in this section, as stabilization reserves are usually established for dividends or experience refunds.
Section 3.8, Follow-Up Studies	
Comment	Several commentators raised concerns about whether follow-up studies by the actuary were necessary. Some provided alternative wording to clarify positions.
Response	The committee believed that follow-up studies, while of great value, are the responsibility of the risk-assuming entity. An actuary is frequently involved but may not be the same actuary as the one determining the liability. The committee revised the wording to note that the responsibility of the actuary, under this ASOP, begins when the actuary is required or is asked to conduct (or assist) in completing a follow-up study. A disclosure statement was also added to section 4.1, Communications and Disclosures.
Section 4.2, Reliance on Others	
Comment	One commentator suggested that the sentence concerning disclosure be deleted from this section.
Response	The committee disagreed and made no changes.

壽險業有關保費不足準備金之回覆

一、第一次回覆

擬於人身保險業簽證精算人員實務處理原則中，增加一段關於一年期傷害險及一年期健康險之保費不足準備金提存。如以下紅字部分。

第七章、精算意見備忘錄

第三節：備忘錄內容

(3)精算備忘錄細項：本段應就下列各項加以說明：

(d)各項簽證項目

i. 準備金適足性，說明內容包括：

- 不同利率的現金流量測試結果說明及敏感度測試。若某些利率下產生盈餘不足（Negative Surplus）時，應說明該利率下，須增加準備金額的大小（以計算日為準）。
- 用以測試之精算假設明顯不同於前期測試的說明。
- 針對一年期傷害險及一年期健康險，若所提存之未滿期保費不足以支應未來所產生的預期理賠支出與費用時，應就其差額提存保費不足準備金。其方法可參考第二章 2.2.1 短期險負債評價。

二、第二次回覆

1. 在第三節 期望投資收益法，請見下述意見

如須含此"期望投資收益法"於此實務處理釋例，'預估投資收益計算表'有一些欄位未定義正確，建議此表各欄位須定義清楚以免造成誤解（詳附檔excel file of book1）；另此"期望投資收益法"未定義如保費不足時其所需提存之保費不足準備金金額；須定義清楚。令此法（產險稱此法為cash flow testing）在資產面須作估算故假設較多但未必增加預估之精確性且產險業商品絕多數應不屬投資屬性重之商品；考量GPV(gross premium valuation)為cash flow testing中之一種；建議在此實務處理以GPV 法為主。

2. 另關於產壽險兼營的短年期意外險及未來的短年期健康險上，請在此「保費不足準備金之精算實務處理釋例」中加註壽險業得採用壽險"人身保險業簽證精算人員實務處理原則"中相關章節；章節如下：

- 2.1. 在第9頁第二節、其他測試方式中所提之損失率法評估短期險需不需要額外準備金，即所收取之保費是否足夠承擔風險；及第15頁 第一節、分析方法。

2.2 關於假設部份;實務處理原則中已整章(第三章 、 準備金適足性之精算假設 on page 11)提供精算人員如何制定相關假設.

3. 定義保費不足準備金計算應至險別, 如個人意外險, 個人健康險 etc.

4. 保費收入除一部分提存至unearned premium reserve, 另一部份提存至危險變動準備金. 建議將危險變動特別準備金加入保費不足準備金測試即 測試是否 $PV(\text{Claim}+\text{Expense})$ 是否大於 $\text{unearned premium reserve} + \text{危險變動準備金} + PV(\text{premium})$

三、第三次回覆

I revise the 第四節 人身保險業應注意事項 as below; as in your 保費不足準備金實務處理釋例; the scope already includes of 一年期傷害險(一年期意外險)及一年期健康險; thus I think in 第四節 the wordings are simply allow the life insurance companies follow 人身保險業簽證精算人員實務處理原則 for this premium deficiency reserve calculation.

第四節 人身保險業應注意事項

人身保險業與財產保險業兼營之商品計有一年期傷害險(一年期意外險)及一年期健康險, 人身保險業在評估上述之兩項保險商品之保費不足準備金所應提存金額, 應遵循人身保險業之相關法令規定, 且得採用人身保險業簽證精算人員實務處理原則.

Moreover, I have comments in method 3 (第三節 期望投資收益法); if result of this method finds premium is deficient then need to go back method 2 to calculate the amount of deficiency reserve; it looks to me this method is redundant as method 1 and 2 can serve both test whether premium is deficient and amount of deficiency reserve can be produced directly from the method 1 and 2.

四、第四次回覆

保費不足準備金實務處理釋例建議

(壽險 AA 委員會)

【P4】

為與 P3 第三章「為提供精算人員於提存保費不足準備金..」一致，擬建議刪除 P4 中

2. 保費不足準備金之實務處理原則或釋例草案：

「..，擬訂簽證精算人員評估保費不足準備金所需遵循或參考..」

之簽證二字

【P15】

「..精算人員必須針對一些會對保費不足準備金計算結果有重大或不確定影響之係數與假設，…」

建議修訂為：

「..對於一年期險準備金具影響性之保險公司，精算人員必須針對一些會對保費不足準備金計算結果有重大或不確定影響之係數與假設，進行敏感度測試…」

【P21】

「..以及第七章第三節(3)(d)i “針對一年期傷害險及一年期健康險，若所提存之未滿期保費不足以支應未來所產生的預期理賠支出與費用時，應就其差額提存保費不足準備金…」

關於前述文字修訂如下

「..以及第七章第三節(3)(d)i “針對一年期傷害險及一年期健康險，若所提存之未滿期保費準備金加計考量未來預期之保費收入後，不足以支應未來所產生的預期理賠支出與費用時，應就其差額提存保費不足準備金…」

【P17-P21】

本研究計畫之釋例皆未考慮決算當時仍有未滿保單年度之預期收入(如月繳件)之狀況，建議增列釋例或修正現有釋例以茲說明。

【P19-P20】

是否可針對現值法之「貼現率」與期望投資收益法之「投資報酬率」之取用準則進一步說明？

中華民國精算學會會議記錄

一、會議資訊

主題	「保費不足準備金實務處理釋例」等議題		
日期	2007/4/25	時間	AM10:00~12:00
地點	富邦產險6F會議室		
紀錄	饒伊璵	電話	27067890 ext.211
e-mail	8062@fubon.com.tw		

二、出席人員

<input checked="" type="checkbox"/>	吳明洋常務理事	<input checked="" type="checkbox"/>	陳貴霞理事	<input checked="" type="checkbox"/>	簡仲明監事	<input checked="" type="checkbox"/>	林育德理事

三、列席人員

<input checked="" type="checkbox"/>	林榮泰先生	<input checked="" type="checkbox"/>	饒伊璵				
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四、會議結論

- (一) 針對「保費不足準備金實務處理釋例」之預算、時程、人員配置及說明，得標資料如下：

1. 研究經費之配置：

各項研究經費依照「行政院金融監督管理委員會委託研究計畫經費編列標準表」編列如下，計畫經費估約為新台幣伍拾貳萬元整。

項 目	金 額 (元)	說 明
一、研究人員經費	275,000	
研究主持人	80,000	研究主持人：\$16,000/月 x 1 人 x 5 個月
協同主持人	75,000	協同主持人：\$15,000/月 x 1 人 x 5 個月
研究員	120,000	研究員：\$8,000/月 x 3 人 x 5 個月
二、座談會出席費	220,000	\$2,000/人次 x 11 人 x 10 次
三、報告印製費	8,000	本項費用暫列，檢據核實報支。
四、雜支費	7,000	依一至三項金額總合百分之一點三九計列。 (包括影印費、會議通知、辦公文具、座談會茶水費及雜支等)。
五、行政管理費	10,000	以一至四項金額總合之百分之一點九六計。

六、經費合計數	520,000	
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2. 研究期間：96/4~96/8，為期 5 個月。

3. 研究人員之配置：

研究主持人—陳貴霞女士

協同主持人—簡仲明先生

研究員—林榮泰先生、陳占晃先生及陳榮森先生

4. 說明：針對產壽險可兼營之商品(例如：傷害險)，保險局希望此研究專案能邀請壽險精算人員參與討論，以求產、壽險之保費不足準備金之提存方式一致性。

(二) 下次會議預定時間為 5/2 (星期三)，詳細時間另行通知。

中華民國精算學會會議記錄

一、會議資訊

主題	96年度研究計劃專案議題		
日期	2007/5/2	時間	PM2:00~3:30
地點	富邦產險6F會議室		
紀錄	饒伊聰	電話	27067890 ext.211
e-mail	8062@fubon.com.tw		

二、出席人員

<input checked="" type="checkbox"/>	吳明洋常務理事	<input checked="" type="checkbox"/>	陳貴霞理事	<input checked="" type="checkbox"/>	簡仲明監事		

三、列席人員

<input checked="" type="checkbox"/>	林榮泰先生	<input checked="" type="checkbox"/>	陳榮森先生	<input checked="" type="checkbox"/>	饒伊聰		
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四、會議結論

- (一) 「保費不足準備金實務處理釋例」之研究計劃，請陳榮森先生收集以下相關資料：
1. 陳振桐先生之保費不足準備金研究報告。
 2. 產、壽險共有之商品別。
 3. CAS Exam 6 教材中有關保費不足之原文及其翻譯。
 4. 保費不足準備金之統計資料。
- (二) 煩請吳明洋先生蒐集現行中國大陸之保費不足準備金提存方法。
- (三) 上述之資料收集(翻譯)請於 5/7(星期一)前完成。
- (四) 下次會議預定時間為 5/9 (星期三)，詳細時間另行通知。

中華民國精算學會會議記錄

一、會議資訊

主題	96年度研究計劃專案相關議題				
日期	2007/5/9	時間	AM10:00~11:30	地點	富邦產險9F會議室
紀錄	饒伊璵	電話	27067890 ext.211	e-mail	8062@fubon.com.tw

二、出席人員

<input checked="" type="checkbox"/>	吳明洋常務理事	<input checked="" type="checkbox"/>	陳貴霞理事	<input checked="" type="checkbox"/>	簡仲明監事	<input checked="" type="checkbox"/>	林育德理事

三、列席人員

<input checked="" type="checkbox"/>	林榮泰先生	<input checked="" type="checkbox"/>	饒伊璵				
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四、會議結論

- (一) 請陳占晃先生開始著手進行「保費不足準備金實務處理釋例」之撰寫，並於下次開會時，將草稿提出討論。
- (二) 下次會議預定時間為5月16號，詳細時間另行通知。

中華民國精算學會會議記錄

一、會議資訊

主題	96年度研究計劃專案等相關議題		
日期	2007/5/16	時間	AM11:00~13:30
地點	富邦產險8F會議室		
紀錄	饒伊璉	電話	27067890 ext.211
e-mail	8062@fubon.com.tw		

二、出席人員

<input checked="" type="checkbox"/>	吳明洋常務理事	<input checked="" type="checkbox"/>	陳貴霞理事	<input checked="" type="checkbox"/>	簡仲明監事		

三、列席人員

<input checked="" type="checkbox"/>	林榮泰先生	<input checked="" type="checkbox"/>	陳榮森先生	<input checked="" type="checkbox"/>	饒伊璉		
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四、會議結論

- (一) 請陳榮森先生草擬「保費不足準備金實務處理釋例」第四章一產、壽險共同險種，且考量公會精算小組之意見後，進行修訂，並將草稿回傳給富邦陳占晃先生(janhuang@fubon.com.tw)。
- (二) 請簡仲明先生及陳榮森先生草擬保費不足相關配套措施(包括法規)。
- (三) 下次會議預定時間為 5/30(禮拜三)，詳細時間另行通知。

中華民國精算學會會議記錄

一、會議資訊

主題	96年度研究計劃專案等相關議題				
日期	2007/6/23	時間	AM10:00~12:30	地點	富邦產險5F會議室
紀錄	饒伊璵	電話	27067890 ext.211	e-mail	8062@fubon.com.tw

二、出席人員

<input checked="" type="checkbox"/>	吳明洋常務理事	<input checked="" type="checkbox"/>	陳貴霞理事	<input checked="" type="checkbox"/>	曾慶泓理事	<input checked="" type="checkbox"/>	簡仲明監事
<input checked="" type="checkbox"/>	林榮泰委員	<input checked="" type="checkbox"/>	韋淑美委員				

三、列席人員

<input checked="" type="checkbox"/>	饒伊璵						
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四、會議結論

- (一) 通過「保費不足準備金實務處理釋例」之期中報告提出日延期至 96 年 7 月 30 日，期末報告提出日延期至 96 年 9 月 15 日，及契約終止日延期至 96 年 10 月 15 日，同時通過精算學會發文保險局草稿，並請精算學會發文報局。
- (二) 請簡仲明先生於下次開會時提供保費不足準備金之相關配套措施(包括法規)。
- (三) 預定下禮拜再次舉行會議，詳細時間再行調查。

中華民國精算學會會議記錄

一、會議資訊

主題	96年度研究計劃專案等相關議題		
日期	2007/6/28	時間	AM15:00~16:30
地點	富邦產險5F會議室		
紀錄	饒伊璵	電話	27067890 ext.211
e-mail	8062@fubon.com.tw		

二、出席人員

<input checked="" type="checkbox"/>	吳明洋常務理事	<input checked="" type="checkbox"/>	陳貴霞理事	<input checked="" type="checkbox"/>	簡仲明監事	<input checked="" type="checkbox"/>	林榮泰委員
<input checked="" type="checkbox"/>	陳淑娟委員						

三、列席人員

<input checked="" type="checkbox"/>	陳榮森先生	<input checked="" type="checkbox"/>	饒伊璵				
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四、會議結論

(一) 「保費不足準備金實務處理釋例」之研究計劃，作以下幾點修改

- (1) 於第三章前言，加入針對產、壽險共同商品之說明。
- (2) 第三章第三節—預期成本法之範例，對於投資收益率、預期賠款支出及預期維持費用部分，需分開說明。
- (3) 刪除第四章 保費不足的相關規定，並增加 2 題 Q&A，Q1：現行保費不足準備金相關法規條文為何。Q2：若現行法令規定最低未滿期保費準備金提存與本釋例所建議之最低保費不足準備金提存標準衝突，應如何考量。
- (4) 保費不足準備金相關法令規定與其他應行配合事項及建議，移至報局之專案說明中，不放入本處理釋例。

(二) 「保費不足準備金實務處理釋例」產壽險溝通事宜如下：

- (5) 請吳明洋先生與學會秘書長討論有關與壽險溝通之事宜。
- (6) 將 1.5 版傳給壽險代表，詢問其意見，並請其於 7/9 前回覆。
- (7) 請吳明洋先生或簡仲明先生與壽險代表開會討論。

(三) 下禮拜開始，固定每禮拜二，公會精算小組開會討論。固定每禮拜四(或五)，產險精算委員會開會討論。

中華民國精算學會會議記錄

一、會議資訊

主題	96年度研究計劃專案議題		
日期	2007/7/6	時間	AM15:00~17:00
地點	富邦產險5F會議室		
紀錄	饒伊璉	電話	27067890 ext.211
e-mail	8062@fubon.com.tw		

二、出席人員

<input checked="" type="checkbox"/>	吳明洋常務理事	<input checked="" type="checkbox"/>	簡仲明監事	<input checked="" type="checkbox"/>	林育德理事	<input checked="" type="checkbox"/>	林榮泰委員
<input checked="" type="checkbox"/>	韋淑美委員	<input checked="" type="checkbox"/>	陳淑娟委員	<input checked="" type="checkbox"/>	陳貴霞理事		

三、列席人員

<input checked="" type="checkbox"/>	饒伊璉						
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四、會議結論

- (一) 「保費不足準備金實務處理釋例」之研究計劃第一章第三節適用範圍，修改如下：

本釋例適用之範圍如下：

- 財產保險業所經營之所有險別，除政策性保險及核能保險外，前述政策性保險包含強制汽車責任保險及政策性地震保險。
- 財產保險業與人身保險業共同經營之險別，包含傷害保險及健康保險。(因96/6/14修正後之保險法尚未公佈，健康保險之一詞暫定)

- (二) 96/7/3 公會精算小組有關保費不足準備金之相關意見納入考量。
- (三) 「保費不足準備金實務處理釋例」再請各位委員 review，是否有需修訂之處。
- (四) 「保費不足準備金實務處理釋例」第三章第三節，(1)投資收益率之估計，有關人身保險業採用之利率，需與壽險業代表討論。
- (五) 「財產保險業保費不足準備金相關法令規定與其他應行配合事項及建議」四、其他應行配合事項中加入“建議停止危險變動特別準備金之提存”。
- (六) 下禮拜停止開會一次。

中華民國精算學會會議記錄

一、會議資訊

主題	「保費不足準備金實務處理釋例」研究專案		
日期	2007/7/17	時間	15:00~17:30
地點	中華民國精算學會		
紀錄	饒伊聰	電話	27067890 ext.211
e-mail	8062@fubon.com.tw		

二、出席人員

<input checked="" type="checkbox"/>	吳明洋委員	<input checked="" type="checkbox"/>	王瑜華委員	<input checked="" type="checkbox"/>	林榮泰委員		

三、列席人員

<input checked="" type="checkbox"/>	陳占晃先生	<input checked="" type="checkbox"/>	陳榮森先生	<input checked="" type="checkbox"/>	饒伊聰先生		
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四、會議結論

- (一) 會中建議將第三章第一節“期望投資收益法”及第三章第二節“現值法”合併說明，並將原第三章第三節“預期成本法”調整為第三章第一節。
- (二) 第一章“定義”一節，修改如下：
- “本釋例所謂「保費不足準備金」，係指保險業對於保險期間尚未屆滿之有效契約或尚未終止之承保風險，並依據其未到期自留危險所計算提存之未滿期保費準備金，~~於考量該準備金之預期投資收益後~~，經測試不足以支應該有效契約或承保風險預期於未來所產生自留賠款與費用時，就其差額所提存之準備金。預期產生之費用一般包括理賠費用、佣金及招攬成本與維持費用(得考量利率的影響)但亦可能因保單特性而包括如保單紅利、盈餘佣金等費用。”
- (三) 第三章“預期成本法”一節中，有關人身保險業採用之投資收益率及費用率。請王瑜華委員帶回討論，應參考何項標準，較為適當。
- (四) 建議廢除一年期團體保險、財產保險業之旅行業責任保險和旅行業履約保證保險於計算未滿期保費準備金時，需考量保費不足準備金之相關法規。
- (五) 修訂後之「保費不足準備金實務處理釋例」，請陳占晃先生於7/20(禮拜五)前完成，並傳給產、壽險精算委員。

中華民國精算學會會議記錄

一、會議資訊

主題		「保費不足準備金實務處理釋例」研究專案			
日期	2007/7/26	時間	AM10:00～12:00	地點	富邦產險6F會議室
紀錄	饒伊璉	電話	27067890 ext.211	e-mail	8062@fubon.com.tw

二、出席人員

<input checked="" type="checkbox"/>	吳明洋常務理事	<input checked="" type="checkbox"/>	陳貴霞理事	<input checked="" type="checkbox"/>	曾慶泓理事	<input checked="" type="checkbox"/>	簡仲明監事
<input checked="" type="checkbox"/>	林榮泰委員						

三、列席人員

<input checked="" type="checkbox"/>	饒伊璉						
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四、會議結論

- (一) 8/3(星期五)預定於保險局舉行「保費不足準備金實務處理釋例」研究專案期中報告，請陳榮森先生進行簡報，並於7/31(星期二)前將簡報內容給各委員，並預定於期中報告前，再舉辦一次產險精算會議。
- (二) 「保費不足準備金實務處理釋例」做以下修改：
- (8) 第一章第二節“定義”：“於考量該準備金之預期投資收益及未來預收之保費後”修改為“於考量未來預期之保費收入”。
- (9) 刪除第二章第五節“再保安排之影響”。
- (10) 增加 Q&A：
- 【問題】計算未滿期保費不足準備金時，是以總保費為基礎，或以自留保費為基礎計算？
- 【回答】精算人員得以擇一計算保費不足準備金，惟以自留保費為計算基礎時，應考量再保險安排之影響。
- (11) 第三章第二節“現值法”：“簽單保費”一詞修改為“保費收入”；“貼現”一詞修改為“折現”；“已付(已決)”一詞修改為“已付(已決)賠款”。
- (12) 第三章第二節“現值法”：“上表賠款金額及維持費用得到 2000 年末滿期保費的未來賠款金額與支出費用現值為 177,789”修改為“上表所計至 2000 年底有效保單之未來賠款與費用現值為 177,789。”。
- (13) 第三章第三節“期望投資收益法”：計算範例刪除 2000 年資料欄。

其餘數字亦需一併更新。

(14) 第三章“保費不足準備金的估算方法”：

“如第一章「保費不足準備金」之定義，此一準備金係指當未滿期保費準備金經測試小於所對應之有效契約或承保風險的預期「未來」之賠款與費用時，必須就其差額所提存之準備金，過去已發生並已認列之費用，就定義而言則不須納入保費不足準備金之分析過程。目前未滿期保費準備金計算非以危險保費(純保費)為基礎，並且已於期初認列佣金及招攬成本之費用，並無將之列為遞延資產，已存在未滿期保費準備金過剩之情形。”

修改為

“如第一章「保費不足準備金」之定義，此一準備金係指當未滿期保費準備金經測試小於所對應之有效契約或承保風險的預期「未來」之賠款與費用時，必須就其差額所提存之準備金。目前未滿期保費準備金計算非以危險保費(純保費)為基礎，並且已於期初認列佣金及招攬成本之費用，並無將之列為遞延資產，故過去已發生並已認列之費用，就定義而言則無需納入保費不足準備金之分析過程。”。

(三) 有關本研究專案配套措施之內容，請饒伊璉詢問保險局，以釐清研究方向。

(四) 修改後之「保費不足準備金實務處理釋例」，將給各位委員，如無修改，將請學會回覆保險局，作為本研究專案期中報告版本。

中華民國精算學會會議記錄

一、會議資訊

主題		「保費不足準備金實務處理釋例」研究專案期中報告簡報內容			
日期	2007/8/2	時間	AM10:00~12:00	地點	富邦產險6F會議室
紀錄	饒伊璉	電話	27067890 ext.211	e-mail	8062@fubon.com.tw

二、出席人員

<input checked="" type="checkbox"/>	吳明洋常務理事	<input checked="" type="checkbox"/>	陳貴霞理事	<input checked="" type="checkbox"/>	簡仲明監事	<input checked="" type="checkbox"/>	陳淑娟委員

三、列席人員

<input checked="" type="checkbox"/>	陳榮森先生	<input checked="" type="checkbox"/>	饒伊璉先生				
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四、會議結論

(一) 「保費不足準備金實務處理釋例」研究專案期中報告簡報內容作以下修改：

1. 簡報標題—報告大綱：刪除“何謂保費不足準備金”項目。
2. 簡報標題—專案小組會議：產險精算委員會召開會議次數修訂為10次。
3. 簡報標題—國外相關法規：法規次序修訂為中國大陸、美國肯塔基州及新加坡。
4. 簡報標題—目的及適用範圍：修訂為適用範圍及使用限制。
5. 簡報標題—估算方法-預期成本法：“優缺點”修改為“特性”。
6. 簡報標題—估算方法-現值法：“優缺點”修改為“特性”並加入“但須考量如何決定折現率”。
7. 簡報標題—估算方法-期望投資收益法：“優缺點”修改為“特性”並加入“但須考量如何決定收益率”。
8. 簡報標題—配套措施：“法令之修改”修改為“法令之適用說明”。
9. 簡報標題—保費不足準備金之歸屬：修改為
10. 方案一：增列獨立科目-保費不足準備金
11. 方案二：歸屬於未滿期保費準備金
12. 子目一：「簽單未滿期保費準備金」
13. 子目二：增列「保費不足準備金」
14. 簡報標題—法令之適用說明：修改為

15. 方案一
 16. 依修訂後保險法第十一條規定，於「保險業各種準備金提存辦法」增列保費不足準備之相關規範
 17. 方案二
 18. 「保險業各種準備金提存辦法」第五條(產險業適用)及第十二條(壽險業適用)中增列第三項條文
 19. 簡報標題—討論議題：修改為
 20. 一年期團體保險準備金提存規定
 21. 類似保費不足準備金之規定
 22. 建議與保費不足準備金之規範一併檢討考量
 23. 特別準備金之檢討
 24. 法定盈餘公積由 10%提高為 20%
 25. 未來 IFRS4 不允許提列事故前準備金
 26. 建議逐年降低(或停止)危險變動特別準備金之提存，以配合 IFRS4 之實施
- (二) 8/3 於保險局舉辦之期中報告，將由陳貴霞理事、吳明洋常務理事、簡仲明監事、陳淑娟委員及陳榮森先生代表出席。

中華民國精算學會會議記錄

一、會議資訊

主題	「保費不足準備金實務處理釋例」研究專案				
日期	2007/8/22	時間	AM10:30~12:00	地點	富邦產險8F會議室
紀錄	饒伊璉	電話	27067890 ext.211	e-mail	8062@fubon.com.tw

二、出席人員

<input checked="" type="checkbox"/>	吳明洋常務理事	<input checked="" type="checkbox"/>	陳貴霞理事	<input checked="" type="checkbox"/>	林育德理事	<input checked="" type="checkbox"/>	林榮泰委員
<input checked="" type="checkbox"/>	韋淑美委員						

三、列席人員

<input checked="" type="checkbox"/>	陳榮森先生	<input checked="" type="checkbox"/>	饒伊璉先生				
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四、會議結論

- (一) 「保費不足準備金實務處理釋例」研究專案有關國外保費不足準備金法令收集部分，納入美國紐約州法令、科羅拉多州法令、肯塔基州法令、AICPA 文章(PREMIUM DEFICIENCY RESERVES)、新加坡法令、中國大陸法令及 CAS 文章(Considerations in the Calculation of Premium Deficiency Reserves)等，共七篇法令(文章)。

中華民國精算學會會議記錄

一、會議資訊

主題	「保費不足準備金實務處理釋例」研究專案				
日期	2007/9/5	時間	15:00~17:00	地點	富邦產險6F會議室
紀錄	饒伊璉	電話	27067890 ext.211	e-mail	8062@fubon.com.tw

二、出席人員

<input checked="" type="checkbox"/>	吳明洋常務理事	<input checked="" type="checkbox"/>	陳貴霞理事	<input checked="" type="checkbox"/>	簡仲明理事	<input checked="" type="checkbox"/>	林榮泰委員
<input checked="" type="checkbox"/>	韋淑美委員	<input checked="" type="checkbox"/>	陳淑娟委員				

三、列席人員

<input checked="" type="checkbox"/>	饒伊璉						
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四、會議結論

(一)「保費不足準備金實務處理釋例」相關資料，修改如下：

- (1)第四章 常見問題與建議，問題5之文字敘述，煩請簡仲明先生重新修潤。
- (2)第四章 常見問題與建議，刪除問題6。
- (3)期中報告審查意見及意見回覆，鄭純農先生“預期賠款是否含IBNR....”之問題回答，煩請陳淑娟委員撰寫。

(二)「財產保險業保費不足準備金相關法令規定與其他應行配合事項及建議」之修改如下：

- (1)“一、各國保費不足準備金相關法令規定”修改為“一、保費不足準備金相關法令研究與建議”。
- (2)刪除“(三)中國大陸相關法令規定之參考”一節。
- (3)請簡仲明先生根據會中討論，及參酌陳占晃先生之相關配套措施(含試算結果)，再行修改。

(三)上述修改(撰寫)，請於9/7(星期五)下班前傳回。

(四)下次開會時間預定為9/13(星期四)早上，詳細時間將另行調查。

中華民國精算學會會議記錄

一、會議資訊

主題		「保費不足準備金實務處理釋例」研究專案			
日期	2007/9/13	時間	10:00~12:00	地點	富邦產險5F會議室
紀錄	饒伊璉	電話	27067890 ext.211	e-mail	8062@fubon.com.tw

二、出席人員

<input checked="" type="checkbox"/>	吳明洋常務理事	<input checked="" type="checkbox"/>	陳貴霞理事	<input checked="" type="checkbox"/>	簡仲明理事	<input checked="" type="checkbox"/>	林榮泰委員
<input checked="" type="checkbox"/>	韋淑美委員						

三、列席人員

<input checked="" type="checkbox"/>	饒伊璉						
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四、會議結論

(七) 9月26日於保險局舉辦之「保費不足準備金實務處理釋例」研究專案審查會議，將由陳貴霞理事、吳明洋常務理事、林榮泰委員及陳榮森先生代表出席。

(八) 「保費不足準備金實務處理釋例」期末報告各章節修改如下：

(15) 壹、二節 背景分析，整段最後部分，修改為“本研究報告亦參考保險事業發展中心已完成之兩篇研究文章。”

(16) 壹、四節 研究方法與步驟，部分文字修改為

“開會討論:透過精算學會產險精算委員會定期開會討論，凝聚委員彼此之間的共識，並據以修正內容。

意見徵詢:透過產險公會精算小組與業界溝通，凝聚委員彼此之間的共識，並據以修正內容。”

(17) 參、三、一節 預期成本法之計算範例，“(4)2000年一般費用率”修改為“(6)預期一般費用率”。

(18) 肆、其他應行配合事項及建議中，有關“「保費不足準備金」之適用範圍”修改為“「保費不足準備金」之提存範圍”。

(19) 肆、一、(三)節 主管機關行政函釋應行修訂之建議事項中，部分文字修改為“但其性質即為保費不足準備金之提存範圍，故建議配合「保費不足準備金」提存辦法之實施，得考量廢除上述兩行政函釋之規範”。

(20) 肆、二之標題修改為“二、 保費不足準備金對現行危險變動特別

準備金之影響評估與建議”。

- (21) 肆、二、(3) 提存方式中，部分文字修改為“現行重大事故特別準備金及危險變動特別準備金按 IFRS4 規定不應認列為負債”
- (22) “保費不足準備金配套措施建議草案試算表”再請陳占晃先生更新。

中華民國精算學會會議記錄

一、會議資訊

主題	精算考試議題及「保費不足準備金實務處理釋例」研究專案				
日期	2007/10/11	時間	14:00~15:20	地點	富邦產險8F會議室
紀錄	饒伊璵	電話	27067890 ext.8047	e-mail	8062@fubon.com.tw

二、出席人員

<input checked="" type="checkbox"/>	吳明洋委員	<input checked="" type="checkbox"/>	陳貴霞委員	<input checked="" type="checkbox"/>	曾慶泓委員	<input checked="" type="checkbox"/>	簡仲明委員
<input checked="" type="checkbox"/>	龍吟委員	<input checked="" type="checkbox"/>	林榮泰委員	<input checked="" type="checkbox"/>	陳淑娟委員		

三、列席人員

<input checked="" type="checkbox"/>	陳榮森先生	<input checked="" type="checkbox"/>	饒伊璵				
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四、會議結論

(九) 「保費不足準備金實務處理釋例」各章節主要修改部分如下：

(23) 第二章第四節 選擇保費不足準備金的計算方法，修改為“在估算保費不足準備金之前，精算人員可以利用所蒐集的各種資料，選擇適當方法來估算保費不足準備金。本釋例特舉預期成本法、現值法與期望投資收益法等幾個常見的保費不足準備金之估算方法為例，於下一章另行說明。

估算保費不足準備金的方法並不以此處所列方法為限，精算人員可根據保費不足準備金之意涵，參考國外相關規定或其他各國產險精算學會出版之書籍及論文(如美國產險精算學會)等，並根據所蒐集的資料，選擇合適的估算方法。所使用之方法應注意前後期間之一致性，若衡量實際情況確實有改變之必要，精算人員應於精算意見書中揭露。”

(24) 第三章前言部分，修改為“依第一章「保費不足準備金」之定義，此一準備金係指當未滿期保費準備金經測試小於所對應之有效契約或承保風險的預期「未來」之賠款與費用時，必須就其差額所提存之準備金。目前未滿期保費準備金計算非以危險保費(純保費)為基礎，且佣金及招攬成本已於簽單時認列為費用，並未列為遞延資產，故過去已發生並已認列之費用，就定義而言則無需納入保費不足準備金之分析過程。”。並刪除第三段之“保單年度制之保費”。

(25) 第三章第一節 預期成本法，“需提列”改為“須提列”；“反應”修改為“反映”。

(26) 第三章第二節 現值法，“部份”改為“部分”。

(27) 刪除第三章第四節 評估方法之適用。

中華民國精算學會會議記錄

一、會議資訊

主題	「保費不足準備金實務處理釋例」		
日期	2007/05/18	時間	10:00~11:30
地點	新安東京海上1201會議室		
紀錄	陳興進	電話	02-27067890#211
e-mail	sjchen@fubon.com.tw		

二、出席人員

<input checked="" type="checkbox"/>	申賢英	<input checked="" type="checkbox"/>	吳智中	<input checked="" type="checkbox"/>	呂秋敏	<input checked="" type="checkbox"/>	林金淵
<input checked="" type="checkbox"/>	林榮泰	<input checked="" type="checkbox"/>	陳淑娟	<input type="checkbox"/>	陳榮森	<input checked="" type="checkbox"/>	陳興進
<input checked="" type="checkbox"/>	楊中天	<input checked="" type="checkbox"/>	楊志正	<input type="checkbox"/>	謝良瑾		

三、列席人員

<input checked="" type="checkbox"/>	陳占晃						
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四、會議結論

1. 建議釐清計算說明書之最低保費(或團體傷害險之相關規定)是否屬於保費不足準備金之範圍。
2. 請陳占晃修訂「保費不足準備金實務處理釋例」第三章所引用 terrence M. O'Brien & John G. Aquino, "Premium Deficiency Reserves"之範例。
3. 請陳占晃於釋例中增加關於實務上險別合併及資料處理之議題內容。
4. 6/20 日前之三次會議時間暫訂為 5/29、6/5、6/12，後續會再通知。

中華民國精算學會會議記錄

一、會議資訊

主題	「保費不足準備金實務處理釋例」		
日期	2007/05/29	時間	12:00~1:00
地點	新安東京海上1201會議室		
紀錄	陳榮森	電話	23821666#241
e-mail	rongsen@mail.tfmi.com.tw		

二、出席人員

<input checked="" type="checkbox"/>	申賢英	<input type="checkbox"/>	吳智中	<input checked="" type="checkbox"/>	呂秋敏	<input checked="" type="checkbox"/>	林金淵
<input checked="" type="checkbox"/>	林榮泰	<input checked="" type="checkbox"/>	陳淑娟	<input checked="" type="checkbox"/>	陳榮森	<input checked="" type="checkbox"/>	陳興進
<input checked="" type="checkbox"/>	楊中天	<input checked="" type="checkbox"/>	楊志正	<input checked="" type="checkbox"/>	謝良瑾		

三、列席人員

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四、會議結論

(一)草稿內容建議修改部份：

1. 第一章第二節_法律限制：保費不足準備金誤植為賠款準備金。
2. 建議第二章第一節與第二節加以合併，標題延用第一節原標題，第二節部份僅節錄第四段斜體字段路；第一節第二段文中所述”業界與媒體”建議修改為”公司外部”另同段文中”幫忙”等用語，建議刪除。
3. 第二章第三節第一段末句”以下的事項，在台灣比較常見”，建議修改為”例如：”；”保單合約的特殊條件”建議修改為”保險契約的特殊條件”；第二段建議整段刪除。
4. 第二章第四節第一段建議整段刪除；第二段第二行末句”所採用的險別的分類”建議修改為”所採用的險別分類”；第三段第一行末句”險別合併資料”建議修改為”險別合併”。
5. 第二章第五節第一段第二行”如資料、對於業務的了解與特色等等”建議刪除；第二段建議整段刪除。
6. 第二章第六節及第七節建議予以合併，並參考賠款準備金實務處理釋例之寫法予以修改。
7. 第三章文中提及”遞延費用”因考量目前國內無費用遞延之規定且 IFRS 亦不允許遞延費用，故建議予以刪除，並於刪除遞延費用後再重新檢視相關方法及釋例是否可適用國內之作法；第三節現值法應為第二節，後序節次亦應予以調整。

(二)法令修改意見

參考國外相關法令規定，「保費不足準備金」為未到期風險準備之一種，因目前依保費險法第十一條之規定，並無「未到期風險準備金」僅有「未滿期保費準備金」，故可考量將其併入「未滿期保費準備金」之中，並於保險業各種準備金提存辦法第五條中增列第三項之規定。

唯考量「未滿期保費準備金」為計算滿期保費之依據，若加入「保費不足準備金」後可能會造成損失率等之扭曲，故建議依保險業各種準備金提存辦法第六條第一項第三款之規定，視為因特列需要而加提之特別準備金，除可避免損失率扭曲，亦可避免法令之修改。有關 IFRS4 之規定，僅不允許事故前準備金之提存，雖將保費不足準備金置於特別準備金項下，但本質上亦不違反其規定。

中華民國精算學會會議記錄

一、會議資訊

主題	「保費不足準備金實務處理釋例」		
日期	2007/06/05	時間	10:00~1:00
		地點	新安東京海上1201會議室
紀錄	陳榮森	電話	23821666#241
		e-mail	rongsen@tfmi.com.tw

二、出席人員

<input checked="" type="checkbox"/>	申賢英	<input type="checkbox"/>	吳智中	<input checked="" type="checkbox"/>	呂秋敏	<input type="checkbox"/>	林金淵
<input checked="" type="checkbox"/>	林榮泰	<input checked="" type="checkbox"/>	陳淑娟	<input checked="" type="checkbox"/>	陳榮森	<input checked="" type="checkbox"/>	陳興進
<input checked="" type="checkbox"/>	楊中天	<input type="checkbox"/>	楊志正	<input checked="" type="checkbox"/>	謝良瑾		

三、列席人員

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四、會議結論

- (一)建議於第一章增列「保費不足準備金」之定義。
- (二)建議依前次會議之建議將第二章第五節及第六節予以合併並修改。
- (三)第三章文中所述「II-A 法」、「II-B 法」、「PV-A 法」及「PV-B 法」建議各修改為「方法一」及「方法二」。
- (四)考量目前國內無遞延費用之規定，建議刪除第三章所有含遞延費用之例子。
- (五)考量第三章第一節及第二節所引用之方法為 AICPA 所定，而在美國係賠款係採已付基礎，故建議將文中所有「已付」修改為「已付(已決)」。
- (六)考量「保費不足準備金」之定義，建議將第三節之名稱由「綜合比率法」改為「期望成本率法」；並增列可損失率可用多年平均或扣除異常巨額賠案；並建議將範例中之「核保費用」改為「維持費用」較為合理；另第 13 頁最末一行之計算式數值錯誤。
- (七)考量「保費不足準備金」之定義及合理性，建議刪除第三章第四節。
- (八)請於第五章常見問題與建議增列問題一：「為什麼國外部分文章於討論保費不足準備金時，需考量遞延費用，為何本釋例之方法皆未提及？」；回答一：「依保費不足準備之定義，本項準備金係為彌補未到期風險準備之不足，但目前國內之會計制度並不允許招攬費用之遞延，故相關費用皆已於簽單之初認列，故未到風險僅有解約退費、賠款支出及維持費用，故不需考遞延費用。」

中華民國精算學會會議記錄

一、會議資訊

主題	「保費不足準備金實務處理釋例」		
日期	2007/06/12	時間	10:00~1:00
		地點	新安東京海上1201會議室
紀錄	陳榮森	電話	23821666#241
		e-mail	rongsen@tfmi.com.tw

二、出席人員

<input checked="" type="checkbox"/>	申賢英	<input checked="" type="checkbox"/>	吳智中	<input checked="" type="checkbox"/>	呂秋敏	<input checked="" type="checkbox"/>	林金淵
<input checked="" type="checkbox"/>	林榮泰	<input checked="" type="checkbox"/>	陳淑娟	<input checked="" type="checkbox"/>	陳榮森	<input checked="" type="checkbox"/>	陳興進
<input checked="" type="checkbox"/>	楊中天	<input checked="" type="checkbox"/>	楊志正	<input type="checkbox"/>	謝良瑾		

三、列席人員

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四、會議結論

- (一)建議於第一章增列第二節定義，說明保費不足準備金之定義，並強調係針對自留風險部份，並請陳榮森協助草擬該段文字。
- (二)第二章第三節第二段”可將性質相似的險別合併，來觀察過去的理賠經驗，並將合併理賠資料分析後的發現，如預估損失率，應用於合併前的各個險別。”建議修改為”可將性質相似的險別合併，用以觀察過去的理賠及費用經驗，並將合併險後所發現之結果，應用於合併前的各個險別。”
- (三)第二章第四節第二段”本釋例所列方法有期望投資收益法、現值法、綜合比率法及自留損失率法”建議修改為”本釋例所列方法有期望投資收益法、現值法及期望成本法”。
- (四)請陳榮森協助於第三章第一節之前，增列保費不足準備金之定義並說明不含招攬成本之原因，以強化本釋例之說服力。
- (五)建議修改第三章之各釋例之損失率及維持費用率，建議提高損失率並調降維持費用率。
- (六)建議第三章第三節”期望成本率法”修改為”期望成本法”。
- (七)第四章第一節有關「保險業各種準備金提存辦法」第 10 條及第 16 條之規定，建議予以刪除，並稍加潤飾。
- (八)請陳榮森協助校對及語句之調整。

中華民國精算學會會議記錄

一、會議資訊

主題	「保費不足準備金實務處理釋例」		
日期	2007/07/02	時間	10:00~1:00
地點	新安東京海上1201會議室		
紀錄	陳榮森	電話	23821666#241
e-mail	rongsen@tfmi.com.tw		

二、出席人員

<input checked="" type="checkbox"/>	申賢英	<input checked="" type="checkbox"/>	吳智中	<input checked="" type="checkbox"/>	呂秋敏	<input checked="" type="checkbox"/>	林金淵
<input checked="" type="checkbox"/>	林榮泰	<input checked="" type="checkbox"/>	陳淑娟	<input checked="" type="checkbox"/>	陳榮森	<input checked="" type="checkbox"/>	陳興進
<input checked="" type="checkbox"/>	楊中天	<input type="checkbox"/>	楊志正	<input checked="" type="checkbox"/>	謝良瑾	<input type="checkbox"/>	

三、列席人員

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四、會議結論

- (一)建議於第一章第二節第四行加入”自留”兩字，以茲區別。
- (二)建議第三章所有「整張生效保單」改為「整張有效保單」，「生效保單未滿期部分」改為「有效保單未滿期部分」。
- (三)第三章第三節(2)預期賠款支出之估計，建議增加損失率基礎之說明。
- (四)修改後之草稿請富邦饒伊璵轉寄國泰吳副總，並提供壽險精算委員會討論。
- (五)法令修正建議之草案，無異議。

中華民國精算學會會議記錄

一、會議資訊

主題	「保費不足準備金實務處理釋例」		
日期	2007/08/14	時間	14:00~15:30
		地點	新安東京海上1201會議室
紀錄	陳榮森	電話	23821666#241
		e-mail	rongsen@tfmi.com.tw

二、出席人員

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<input checked="" type="checkbox"/>	林榮泰	<input checked="" type="checkbox"/>	陳淑娟	<input checked="" type="checkbox"/>	陳榮森	<input checked="" type="checkbox"/>	陳興進
<input checked="" type="checkbox"/>	楊中天	<input type="checkbox"/>	楊志正	<input type="checkbox"/>	謝良瑾	<input type="checkbox"/>	

三、列席人員

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四、報告事項

陳榮森報告 96/8/3 日至保險局期中報告之初步結論：

- (一)因壽險業對本釋例之架構有諸多考量，因此會中提議由產壽險業訂定各自之版本，此一結論亦由富邦陳貴霞資深協理於精算學會理事會中確認。本次會議所討論之版本已刪除壽險業之部份。
- (二)依與會委員之建議，刪除第一章第四節原「遵守法律或監理機關之規定所造成的偏差並不被認為有違本釋例。」之內容。
- (三)依與會委員之建議，於第二章第五節新增「而不論是係數之選擇及假設，皆應注意前後期間之一致性，若衡量實際情況確實有改變之需要，亦應在精算意見書及精算備忘錄中揭露。」
- (四)依委員建議文中所提及「會計制度」全修改為「保險法令及會計處理相關實務」
- (五)其他議題：「維持費用之定義」、「各方法之適用情境」、「範例之統計基礎」、及「新增小額信貸、工程險及分期繳費範例」等議題，因會中並無明確之決議，提請本次會議討論，並擬待保險險局之會議記錄再行增修。

五、會議結論

- (六)「維持費用」之定義由第三章移至第一章第二節，並修改為：「維持費用係指保險業為維持未屆滿之有效契約或尚未終止之承保風險之管理費用。」
- (七)「適用情境」之議題，因於第三章第二節及第三節已提及，故是否配合調整請再行考量。
- (八)「範例統計基礎」之議題，請將第三章第一節前之範例，移至第二節之前段並

修改第一節範例之數字以資區別。

(九)新增「小額信貸、工程險及「期繳費等範例」之議題，待保險局會議記錄再行討論。

中華民國精算學會會議記錄

一、會議資訊

主題	「保費不足準備金實務處理釋例」		
日期	2007/08/21	時間	10:00~12:30
地點	新安東京海上1201會議室		
紀錄	陳榮森	電話	23821666#241
e-mail	rongsen@tfmi.com.tw		

二、出席人員

<input checked="" type="checkbox"/>	申賢英	<input checked="" type="checkbox"/>	吳智中	<input checked="" type="checkbox"/>	呂秋敏	<input type="checkbox"/>	許國棟
<input checked="" type="checkbox"/>	林榮泰	<input checked="" type="checkbox"/>	陳淑娟	<input checked="" type="checkbox"/>	陳榮森	<input checked="" type="checkbox"/>	陳興進
<input checked="" type="checkbox"/>	楊中天	<input checked="" type="checkbox"/>	楊志正	<input checked="" type="checkbox"/>	謝良瑾	<input type="checkbox"/>	

三、列席人員

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四、會議結論

- (一)有關分期保費及費用是否扣除再保佣金之問題，請於第四章常見問題與建議中增列。
- (二)請將第三章提到之「有效保單」改為「有效契約」，以與法令用語一致。
- (三)請於第三章第一節之例子中加註說明，已發生賠款與理賠費用含當年度 IBNR 之變動數。

中華民國精算學會會議記錄

一、會議資訊

主題	「保費不足準備金實務處理釋例」		
日期	2007/09/04	時間	10:00~12:30
地點	新安東京海上1201會議室		
紀錄	陳榮森	電話	23821666#241
e-mail	rongsen@tfmi.com.tw		

二、出席人員

<input checked="" type="checkbox"/>	申賢英	<input checked="" type="checkbox"/>	吳智中	<input checked="" type="checkbox"/>	呂秋敏	<input checked="" type="checkbox"/>	許國棟
<input checked="" type="checkbox"/>	林榮泰	<input checked="" type="checkbox"/>	陳淑娟	<input checked="" type="checkbox"/>	陳榮森	<input checked="" type="checkbox"/>	陳興進
<input checked="" type="checkbox"/>	楊中天	<input checked="" type="checkbox"/>	楊志正	<input checked="" type="checkbox"/>	謝良瑾	<input type="checkbox"/>	

三、列席人員

<input checked="" type="checkbox"/>	陳占晃	<input checked="" type="checkbox"/>	林育德				
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四、會議結論

- (一)有關最新修訂之釋例無其他修正之意見。
- (二)有關期中報告之意見回覆，除修正陳榮森所提之部份文字外，無其他意見。
- (三)有關保費不足準備金及特別準備金之試算，非精算學會專案之工作內容，不適宜放入精算學會之報告中，但可由公會精算小組提供主管機關參考，另相關試算表請陳占晃提供給各委員，並請各委員於9月13日前將試算結果提供給公會陳秀卿彙整(請林育德聯絡)。

中華民國精算學會會議記錄

一、會議資訊

主題	「保費不足準備金實務處理釋例」		
日期	2007/10/02	時間	10:00~11:30
		地點	富邦產物總公司5F會議室
紀錄	陳興進	電話	2706-7890#8211
		e-mail	sjchen@fubon.com.tw

二、出席人員

<input checked="" type="checkbox"/>	申賢英	<input type="checkbox"/>	吳智中	<input checked="" type="checkbox"/>	呂秋敏	<input type="checkbox"/>	許國棟
<input checked="" type="checkbox"/>	林榮泰	<input type="checkbox"/>	陳淑娟	<input checked="" type="checkbox"/>	陳榮森	<input checked="" type="checkbox"/>	陳興進
<input type="checkbox"/>	楊中天	<input type="checkbox"/>	楊志正	<input type="checkbox"/>	謝良瑾	<input type="checkbox"/>	

三、列席人員

<input checked="" type="checkbox"/>	陳占晃						
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四、會議結論

本次會議主要討論下列三項議題，會議結論如下：

(一)各種準備金估算。如自留未滿期保費準備金之計算，對於非比例再保準備金之估算。

【會議結論】針對此議題，本次會議主要作經驗交流。(實務上，如自留未滿期保費準備金一般採 24 分之一法或 365 分之一法予以計算)

(二)保費不足準備金之計算，是按商品別還是險別計算提存？

【會議結論】按險別計算。

(三)因應 IFRS4 之規定，即在財務報表需以 Gross 表示準備金，因此，在準備金提存辦法之規定，是否有修正之必要？

【會議結論】如 IFRS4 規定需以 Gross 表示準備金，則準備金提存辦法或相關配套措施(產物保險業會計制度及財務報表等)有修正之必要。

「保費不足準備金之精算實務處理釋例」期中報告 審核會議紀錄

一、時間：96 年 8 月 3 日（星期五）上午 10:00~12:40

二、地點：本局 1724 會議室

三、主席：曾副局長玉瓊

四、出席人員：鄭會計師純農、賴教授曜賢、吳教授君誠

中華民國精算學會（陳貴霞、簡仲明、陳榮森）

保險事業發展中心（梁副總經理正德、劉正權）

產險公會（陳淑娟、賴建泓、吳麗雲）

壽險公會（陳昌正、李度儀、黃建邦）

保險局（林組長寶惜、鄭副組長燦堂、

施科長麗婕）

五、紀錄：羅燕玲

六、結論：

（一）本案經與會人員就該期中報告提具之意見表詳附件，彙整如次：

- 1.本研究計畫之需求說明計有三項內容，惟本次期中報告的內容似僅著重於第二項需求上；因三項內容應有研究上的順序性，建議研究單位能補充對第一項需求的研究內容，並據以提出第二項需求的處理準則與釋例，且說明第三項需求目前的進度與研究可能包含的具體內容。
- 2.本釋例第一章第四節最後一段「遵守法律....」等敘述不符中文表述習慣，建議刪除。
- 3.本釋例中多數提及國內現行之會計制度，因現行會計制度乃建制在保險法之下，故建議修正為「現行保險法令及會計實務」。

打字：

校對：

監印：

發

- 4.預期賠款是否含 IBNR，已付賠款是否為自留賠款及維持費用是否扣除再保佣金收入（page 8），宜澄清說明。
 - 5.本釋例中介紹之提存方法係以會計年度（Calendar year）為基礎，建議以保單年度（Policy year）基礎計算，所得數字較為正確。
 - 6.第二章第五節精算人員於計算過程中選擇之假設需有一致性（各年度），如有改變需詳加說明（page 5）。
 - 7.本研究案中計算標準以自留保費為基礎是否合理有待斟酌，建議本項架構可以類似 GPV 的計算精神，將再保費用等因素考慮於 GP-Claim-expense 之計算式中後，再與未滿期保費比較，以 GPV 高於未滿期保費之差額為保費不足準備金。
 - 8.本釋例第三章前三節所提的三種方法，(1)建議補充說明各自適合使用的情境。(2)亦請說明第一、二種方法是否僅是第三種方法的特例？
 - 9.本案涉及壽險商品中的傷害保險與健康保險，因壽險公司經營健康險、傷害險等業務較產險公司有足夠之經驗，建議可參酌壽險業之經驗，與壽險精算委員會與簽證精算委員協調，訂定產壽險業間計算相關準備金之標準。
 - 10.在短期險中是否存在有續期保險費的可能(例如，一年期保險，保戶選擇月繳)或有保證續保存在的可能(例如，一年期健康保險)？如有，建議增加包含續期保險費與有保證續保的說明與舉例。
 - 11.目前壽險業已有現金流量測試評估各種準備金的適足性，請專案小組於提建議方案時亦應考量或評估現行做法。
 - 12.專業再保之業務特性與直接簽單公司業務不同，故保費不足準備金問題，宜另案處理。
- (二)前揭意見，請中華民國精算學會審酌修正或辦理。

保費不足準備金實務處理釋例

期中報告審查意見及處理情況

委員姓名	原文內容	審查委員意見	處理情況
吳君誠 先生		本研究計畫之需求說明計有三項內容，惟本次期中報告的內容似僅著重於第二項需求上；因三項內容應有研究上的順序性，建議研究單位能補充對第一項需求的研究內容，並據以提出第二項需求的處理準則與釋例，且說明第三項需求目前的進度與研究可能包含的具體內容。	本次計畫的需求計有三點：(1)各國保費不足準備金的相關規定；(2)保費不足準備金之實務處理原則或釋例草案；(3)其他應行配合事項及建議。期中報告所撰寫內容，係已參考所蒐集各國保費不足準備金的相關規定，並據以進行研擬建議其他應配合事項及建議，詳細內容，將於期末報告中提出完整內容。
		本釋例第三章前三節所提的三種方法，(1)建議補充說明各自適合使用的情境。(2)亦請說明第一、二種方法是否僅是第三種方法的特例？	依據審查意見於第三章前文增列相關說明，釋例中所提之各方法皆由定義發展而來，其間並無絕對之從屬關係，各方法間之差異主要係來自可取得之資料程度不同。
		在短期險中是否存在有續期保險費的可能(例如，一年期保險，保戶選擇月繳)或有保證續保存在的可能(例如，一年期健康保險)？如有，建議增加包含續期保險費與有保證續保的說明與舉例。	釋例僅作原則性之規範，並於第四章常見問題與建議之問題5說明相關處理方式。
賴曜賢 先生		本釋例第一章第四節最後一段「遵守法律....」等敘述不符中文表述習慣，建議刪除。	依據審查意見予以刪除。

委員姓名	原文內容	審查委員意見	處理情況
		專業再保之業務特性與直接簽單公司業務不同，故保費不足準備金問題，宜另案處理。	本釋例用以說明產物保險公司所經營保險商品保費不足處理情形，並不侷限保險公司的經營組織型態，亦即專業再保公司承接產物保險業務的部分，可參考本釋例處理其保費不足準備金。但專業再保公司是否需提存保費不足準備金，屬於主管機關監理政策之考量，非屬於本專案小組研究之範疇。
		第一章第二節定義所提「費用」是否係指「維持費用」宜澄清說明。	已改用「一般費用」取代原文之「維持費用」，並已參照「費用因子實務處理準則」對於一般費用之定義。
保發中心 梁正德 副總 劉正權 先生		第二章第五節精算人員於計算過程中選擇之假設需有一致性（各年度），如有改變需詳加說明。	依據審查意見於該節增列相關內容。
		P.11 預估投資收益計算表之表頭有「保費收入」，但沒有數字，如果在計算過程中不需，可考慮去除。	依據審查意見予以刪除。
		對於特列險種(如：傷害險有法定危險發生率)之保費不足準備金是否需有計算方法範例。	釋例僅作原則性之規範，並於第四章常見問題與建議之問題3說明有關團體傷害險等，有特殊準備金提存規定險種之適用情形。
鄭純農 先生		本釋例中多數提及國內現行之會計制度，因現行會計制度乃建制在保險法之下，故建議修正為「現行保險法令及會計實務」。	依據審查意見修改原文內容。

委員姓名	原文內容	審查委員意見	處理情況
		本案涉及壽險商品中的傷害保險與健康保險，因壽險公司經營健康險、傷害險等業務較產險公司有足夠之經驗，建議可參酌壽險業之經驗，與壽險精算委員會與簽證精算委員協調，訂定產壽險業間計算相關準備金之標準。	已由壽險精算委員會另行訂定人身保險業之處理釋例。
		預期賠款是否含 IBNR，已付賠款是否為自留賠款及維持費用是否扣除再保佣金收入，宜澄清說明。	預期賠款含 IBNR，並依審查意見，於釋例中加註說明。 是否採自留賠款基礎，已於第四章常見問題與建議之問題 4 中說明。 維持費用項已改為一般費用項，即不包含再保佣金收入。
		本釋例中介紹之提存方法係以會計年度 (Calendar year) 為基礎，建議以保單年度 (Policy year) 基礎計算，所得數字較為正確。	本釋例介紹之提存方法並未特別指明採用何種統計基礎，精算人員可根據所蒐集之資料內容、資料成本、時效性、估算方法與準確性之後綜合考量採取適當之統計基礎。
壽險公會 陳昌正 先生		計算標準以自留保費為基礎是否合理？本項架構應為 GP-Claim-expense，類似 GPV 的計算。若有再保亦應考慮於計算式中才對，再與未滿期保費比。	已由壽險精算委員會另行訂定人身保險業之處理方式。 並擬於人身保險業簽證精算人員實務處理原則，第七章精算意見備忘錄之第三節備忘錄內容(3)之(d)各項簽證項目增加說明，其說明如下：針對一年期傷害險及一年期健康險，若所提存未滿期保費不足以支應未來所產生的預期理賠支出與費用時，應就其差額提存保費不足準備金。其方法可參考第二章 2.2.1 短期險負債評價
		本案涉及壽險商品中的傷害保險與健康保險，建議學會先與壽險精算委員會與簽證精算委員協調，產壽間的做法。	
		目前壽險業已有現金流量測試評估各種準備金的適足性，請專案小組於建議時亦應考量或評估現行做法。	

「保費不足準備金之精算實務處理釋例」期末報告 審核會議紀錄

一、時間：96 年 9 月 26 日（星期三）上午 10:30~13:00

二、地點：本局 1710 會議室

三、主席：曾副局長玉瓊

四、出席人員：鄭會計師純農、賴教授曜賢、吳教授君誠

中華民國精算學會（陳貴霞、吳明洋、林榮泰）

保險事業發展中心（梁副總經理正德、劉正權）

產險公會（林育德、賴建泓、吳麗雲）

壽險公會（陳昌正）

保險局（林組長寶惜、施科長麗婕、侯研究員丁月、郭副研究員榮堅）

五、紀錄：羅燕玲

六、結論：

（一）案經與會人員就該期末報告提具之意見表詳附件，彙整如下：

- 1.研究報告「貳、摘要或彙整各國（州）內容或精髓」部分，應就各國保費不足準備金監理方式、相關精算學會配合作業情形等加以補充。
- 2.本報告應檢討在現行準備金之精算處理準則如何配合增訂規範保費不足準備金之部分，請於提送期末報告時補充之，以與釋例相呼應。
- 3.本報告第三章介紹之保費不足準備金的估算方法，建議說明使用各種方法的優、缺點，以及其使用條件限制，俾供精算人員選擇適當提存方法之依據以及主管機關衡量保險業選用提存方法之標準。

打字： 校對： 監印： 發

- 4.報告中介紹之保費不足準備金的估算方法，有關預期成本法，在產壽險兼營商品時，其計算方式與評估標準，建議與壽險業確認。另損失率之採用，為最近一年或最近數期平均，請補充之。
- 5.有關期望投資收益法，將各期投資收益彙整到評價日時忽略時間價值計算之處理方式之合理性，請再酌或再補強支持的理由。
- 6.報告中提存「保費不足準備金」影響數\$499,255仟元(P31)，請補充說明計算方式與基礎。
- 7.本釋例第三章第二段所言「除另有類似盈餘佣金之特殊狀況外」(P13)，須說明其代表意義以及處理方法，避免日後使用者參考時，產生混淆。
- 8.本釋例第二章第一節，關於「業務資訊與財務無法吻合而導致其無法使用，精算人員應在意見書揭漏」(P10)，與第五節就「精算人員選擇係數與假設改變，應於精算備忘錄中揭漏」，似有不一致現象，建請斟酌修正並修正目前精算學會公布之精算準則及釋例。
- 9.本釋例第二章第五節第二段「依公式計算所得之結果經測試超過合理範圍，...精算人員可以依據自己的判斷選擇一個合適且合理的結果並解釋此一差異」之敘述，意指在經測試、檢視後，仍不合理時，精算人員可就不合理之結果說明即可，還是需調整成合理之結果後再說明，建議宜再表達清楚。
- 10.本報告中(P18)保險公司改變評估方法的條件或限制為何？請補充之。
- 11.本釋例草案最後將成為主管機關對外正式發布文件，內容宜力求語意精簡、順暢，且儘量避免模稜兩可表達，不必要的轉折語也宜刪除。

12.本釋例如適用於專業再保公司與壽險業，建議第三節適用範圍（P9）應予以修正。

(二) 前揭意見，請中華民國精算學會審酌修正或辦理。

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保費不足準備金實務處理釋例

期末報告審查意見及處理情況

委員姓名	原文內容	審查委員意見	處理情況
吳君誠 先生		<p>1. 附錄中蒐集中美星等相關規定，資料甚為豐富，惟於研究報告當中「貳、摘要或彙整各國（州）內容或精髓」似僅列表比對有關保費不足準備金的定義而已；因委託單位是保險監理機關且為符合本研究委託案之第一點需求說明，建議於該部分增列：</p> <p>(1) 中美星之保險監理機關對保費不足準備金如何提存具體規範的比較。</p> <p>(2) 依據他國監理規範的分析與比較或其它具體理由來支持研究報告當中「參、研究結果」與「肆、其他應行配合事項及建議」的論點與建議的合理性。</p>	依據審查意見改善原文內容之表達方式，增加各國保費不足準備金之定義與摘要說明，而研究報告中的「參、研究結果」與「肆、其他應行配合事項及建議」，亦已參考各國對於保費不足準備金之定義及內容摘要而加以論述。

委員姓名	原文內容	審查委員意見	處理情況
		2. 有關研究報告第三章之內容的定位究竟為何？依第一章第一節中提及「本釋例並非精算準則公報，…」，惟按內容觀之，第一章與第二章的內容似不宜稱為釋例，擬請研究單位再次確認本研究報告第三章之定位為何？暨違反時會的效果為何？	<p>本釋例之第三章，其主要目的在於介紹幾種常見的保費不足準備金的估算方法，並透過實際範例的方式，說明如何評估及提存保費不足準備金估算過程，以供精算人員實務操作時，依據現實之相關因素，可直接參考範例的方法或是另行設計其他符合保費不足準備金定義的提存方法。</p> <p>準則公報主要依據現行法令、最新的精算原理，提供精算人員相關的基本原則，而處理釋例則是提供具體案例之可能處理方式，建議實務操作時考量之因素或是作為準則公報之補充說明。</p> <p>而如上所述，處理釋例中所建議考量之因素或可能之處理方式係提供精算人員之參考。</p>
		<p>3 有關研究報告第三章第一節預期成本法中損失率之計算：</p> <p>(1)於產壽險業兼營商品之適用時，建請注意壽險實務對<u>理賠案之處理成本</u>與<u>IBNR</u>是否亦如產險實務一樣計入損失率之分母中？建議與壽險業者進確認對相關計算方式與評做基準能有較為一致性的認知。</p> <p>(2)損失率的計算是否採最近一期資料或是會避免過度波動而採最近數期平均？建請補充此部分的討論。</p>	<p>(1) 目前產險業的損失率計算公式，已包含理賠費用及IBNR，對於產壽險兼營商品，壽險業者是否採用與產險業者相同之計算公式，已由中華民國精算學會壽險精算委員會研議中。</p> <p>(2)精算人員得根據各險別特性、公司的經營策略不同、資料的取得等等不同因素，採用合適之損失率的估算方法，本研究報告無法一一討論各種損失率的估算方法，且各種方法並無絕對優劣。故已於第三章第三段提醒精算人員，採用相關因子需注意考量之因素。</p>

委員姓名	原文內容	審查委員意見	處理情況
		<p>4. 有關研究報告第三章第一節至第三節提及的三種方法，第一種為第二種在利率為零時的特例，第二種方法與第三種方法主要差別有二：第一點差別在每期利息收益的計算，一採複利，一採單利；第二點差別在計算出各期利息收益後彙總到評價日時，一採各期利息收益的現值，一採各期收益直接相加；第一點差別僅在計算利息上是否簡化，尚稱合理；第二點差別則顯示出「期望投資收益法」的矛盾性，既然承認時間價值而計算各期投資收益，但將各期投資收益彙整到評價日時卻又忽略時間價值；因此，對此處理方式的合理性建請再酌或再補強支持的理由。</p>	<p>已於第三章第三節增加期末餘額欄位，該節所說明之方法，係依據現金流量觀念，來計算所提列的未滿期保費，加上未來的投資收益，是否足以支付未來的支出，該方法與目前壽險業者常用之評估方法類似。表中所計算的投資收益，並非單利，僅是用來計算期末的餘額，以整體結果而言，投資收益亦為複利。</p>
		<p>5. 國內原對部分險種(如團體一年定期壽險、團體傷害險、旅行業責任保險、旅行業履約保證保險等)規定按實收保費與法定保費二者中較大者來計提準備，其本質似亦是保費不足準備的概念，且係使用較一致性的客觀與具體之標準；如研究單位仍維持第 26 頁「廢除特定產險商品須遵照特定之準備金提存規定的行政函釋」的建議，建請提供更明顯且較佳之理由，否則建議保留並按研究報告第 19 頁問題 2 之回答辦理。</p>	<p>本研究係提出保費不足準備金之定義，並就定義提出參考之計算方式，而相關法令規範是否符合本研究之定義，並不在本研究考量範圍內，而是否繼續保留此相關規範亦為主管機關之監理政策考量。但如維持現行相關「法定保費」之規定，並同時實施保費不足準備金之提存，若以一般經驗，實收保費低於「法定保費」時，在未滿期保費準備金的計算(較實際為高)、滿期保費的計算上(較實際為低)，將與實際情況有所偏差，而使所估算的保費不足準備金亦有所偏差，故本研究建議廢除「法定保費」之規定，回歸保費不足準備金之原意。</p>

委員姓名	原文內容	審查委員意見	處理情況
		6. 第31頁表中提存保費不足準備金影響數\$499,255 仟元是否採預期成本法？係採用何年度之資料為準？建請補充說明計算的方式與基礎。	第31頁所列之保費不足準備金，係請產險公會商請同業之精算人員，依據95年度的財務數字，參考本釋例之預期成本法估算而得。
		7. 有關第19頁的問題一，依據第22頁中的2的說明，似乎美國在計算保費不足準備時對過去發生的招攬費用亦無遞延的考量，建請對19頁問題一的原回答再予斟酌。	為翻譯表達之問題，已配合審查意見於肆、一、(二)、2修正相關文字。
賴曜賢 先生		本釋例草案最終將成為主管機關對外正式發佈文件，內容宜力求語意精簡、順暢，且儘量避免模稜兩可表達、不必要的轉折語也宜刪除。相關處理方式，如附件所示。	依據審查意見改善原文內容之表達方式。
		部分第二章第四節與第三章第四節有不必要的重複敘述，宜做整合。	依據審查意見刪除第三章第四節。
		第二章第五節最後一段似意猶未盡，宜再著墨。	依據審查意見改善原文內容之表達方式。
		第三章第一段末解釋不是很清楚，宜重述。	依據審查意見改善原文內容之表達方式。
		法令上所謂特別準備金之「特別」乙詞指涉模糊建議一律取消。	本項意見屬於主管機關監理政策之考量，非屬於本專案小組研究之範疇。
保發中心 梁正德 副總		各章節用法不一致	依據審查意見改善原文內容之表達方式。
		從研究大綱內容，應包括：修正修文、準備金實務處理準則及釋例，但文中僅含修正修文及釋例。	已配合審查意見於肆、三、(二)增列相關應配合事項。
		於準備金實務處理準則中，應考量增列保費不足準備金相關說明，以與釋例相呼應。	已配合審查意見於肆、三、(二)增列相關應配合事項。

委員姓名	原文內容	審查委員意見	處理情況
		請在肆、一中增加有關準備金實務處理準則之建議修正內容。	已配合審查意見於肆、三、(二)增列相關應配合事項。
		P.18 保險公司改變評估方法的條件或限制為何？	已於釋例第二章第四節增列相關說明。
鄭純農先生		本釋例第三章介紹三種保費不足準備金提存估算方法，建議於研究計畫中分析各種方法之優、缺點，以及在何種狀況或條件下採用何種方法為宜，藉供精算人員選擇適當提存方法有所依循以及供為主管機關衡量保險業選用提存方法之標準。	本釋例之第三章，其主要目的在於介紹幾種常見的保費不足準備金的估算方法，並透過實際範例的方式，說明如何評估及提存保費不足準備金估算過程，以供精算人員實務操作時，依據現實之相關因素，可直接參考範例的方法或是另行設計其他符合保費不足準備金定義的提存方法。 所提之三種計算範例，係依可取得資料之多寡及詳細程度作為區分，但估算方法並不以這三種方法為限，主要仍須由精算人員根據公司的實際情況來加以判斷決定，故於釋例第四章常見問題與建議，增列問題6。
		本釋例第三章第二段所言「除另有類似盈餘佣金之特殊狀況外」(P13)，宜闡明其所欲表達之真實意涵以及適當處理方式，避免日後遵循本研究計畫者，滋生混淆。	本段文字之目的係提醒精算人員雖無需考量佣金及招攬成本等已於簽單時認列之費用，但應同時注意考量所有未來可能發生之所有費用。已配合審查意見修訂之。

委員姓名	原文內容	審查委員意見	處理情況
		本釋例第二章第一節，關於「業務資訊與財務無法吻合而導致其無法使用，精算人員應在意見書揭露」(P10)，與第五節就「精算人員選擇係數與假設改變，應於精算備忘錄中揭露」，究其影響情節之輕重，似不應產生不一致現象，建請斟酌修正並考量目前精算學會已公布之精算準則及釋例。	因精算備忘錄係供精算專業閱讀，其所載內容皆較與精算專業技術相關，並參考已公佈之精算準則及釋例，將第一段修改為「應於精算備忘錄中揭露」。
		本釋例第二章第五節第二段「依公式計算所得之結果經測試超過合理範圍，…精算人員可以依據自己的判斷選擇一個合適且合理的結果並解釋此一差異」之敘述，意指在經再次測試、檢視後，如結果仍未能落於合理範圍時，精算人員可僅就不合理之結果予以說明即可，或需調整成合理之結果後再加以說明，建議於研究計畫中可再明確闡述研究小組之建議或看法。	本段主要說明，如經第一次測試之後，其結果如超過合理範圍，應檢視計算過程是否失當，如果計算過程失當(例如計算錯誤等等)，則應修正計算過程，如果計算過程並無失當，但測試結果仍超過合理範圍，則可能是受限於資料品質或是其他因素所致，此時精算人員可以依據自己的判斷選擇一個合適且合理的結果並解釋此一差異。此一問題亦將於釋例第四章常見問題與建議，增列問題7。
保險局		本報告「貳、摘要或彙整各國(州)內容或精髓」部分，應就各國保費不足準備金監理方式、相關精算學會配合作業情形等加以補充。	依據審查意見改善原文內容之表達方式，增加各國保費不足準備金之定義與摘要說明，而研究報告中的「參、研究結果」與「肆、其他應行配合事項及建議」，亦已參考各國對於保費不足準備金之定義及內容摘要而加以論述。
		本報告應檢討在現行準備金之精算處理準則如何配合增訂規範保費不足準備金之部分，請於提送期末報告時補充之。	已配合審查意見於肆、三、(二)增列相關應配合事項。

委員姓名	原文內容	審查委員意見	處理情況
		有關保費不足準備金提存方法及法令規定建議草案，請再與壽險精算委員會確認可行後，再予整合併入本報告中。	有關本報告之保費不足準備金提存方法及法令規定建議草案，已與壽險精算委員會確認其可行性，詳細請見伍、壽險業有關保費不足準備金之回覆及參、研究結果中第三章第四節人身保險業應注意事項。

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