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# UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

## FACULTAD DE CIENCIAS

*IMPLANTACION DE RESERVAS US-GAAP  
DENTRO DE UNA COMPAÑIA DE SEGUROS  
EN MEXICO*

T E S I S

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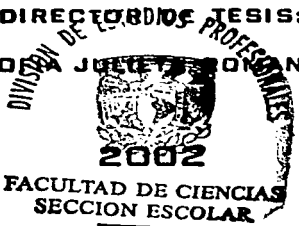
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Comunicamos a usted que hemos revisado el trabajo escrito:  
"IMPLANTACIÓN DE RESERVAS US-GAAP DENTRO DE UNA COMPAÑÍA  
DE SEGUROS EN MÉXICO"

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Dicho trabajo cuenta con nuestro voto aprobatorio.

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Con mucho cariño y aprecio, para  
mi familia, por su paciencia y apoyo.

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para la realización de este trabajo.

*Voy caminando por la playa para siempre,  
entre la arena y la espuma.*

*La marea borrará las huellas de mis pies  
y el aire esparcirá la espuma.*

*Pero el mar y la playa continuarán  
siempre.*

Gibran Jalil Gibran

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## INTRODUCCIÓN

Debido al auge que han tenido las compañías de seguros con capital extranjero en México, y que los Estados Financieros actuales (para los seguros de vida a largo plazo) no representan la situación financiera real de las empresas de seguros; a mediados de la década de los 90's se empezó a implantar la metodología de valuación de reservas de acuerdo a los Principios de Contabilidad Generalmente Aceptados (GAAP, Generally Accepted Accounting Principles) dentro de las compañías de seguros; ya que permiten diferir los gastos y amortizarlos durante el tiempo de vigencia del seguro, y así no afectar tan duramente las cuentas de resultados en el primer año de la póliza, pues como sabemos los gastos de adquisición de las compañías de seguros en el primer año de la póliza son muy elevados y se espera recuperarlos a lo largo de la vida de la póliza.

La valuación de reservas de acuerdo a GAAP pretende sincronizar costos y gastos con ingresos de prima bajo ciertos supuestos de los que hablaremos a lo largo de este trabajo. Muchos de estos supuestos se basan en la experiencia de la compañía y determinan en gran medida los resultados y el desarrollo futuro de la misma. Un principio fundamental de GAAP, es que las ganancias o pérdidas de un período contable debe ser igual a los ingresos devengados de ese período, menos los egresos devengados (asociados a esos ingresos) en ese mismo período, lo cual implica la generación de un Estado Financiero que representa la situación real de la compañía. Cabe mencionar que existen también normas contables para los gastos que se sincronizarán con los ingresos de prima, por lo que la valuación de la reserva de los Costos de Adquisición Diferibles (DAC, Deferred Acquisition Costs) también será caso de estudio de este trabajo.

Cabe hacer mención que se tomarán los datos reales de una compañía de seguros de vida en México, con capital extranjero, y la cual requiere de la implantación de reservas GAAP para la expresión de sus estados financieros. Dicha compañía tiene en vigor planes de vida tradicional y de vida flexible a largo plazo, sin embargo para efectos de este trabajo supondremos que la compañía sólo maneja planes tradicionales y que por lo tanto nos basaremos específicamente en las Normas Contables SFAS60 (Statement of Financial Accounting Standards # 60) para los seguros de vida de larga duración (o mayores a un año). La implantación de reservas GAAP para los seguros de vida universal puede ser tema para la realización de otro trabajo de tesis.

En el primer y segundo capítulo se presenta el estado actual de la cartera en vigor de la compañía; la identificación de los planes que deben modelarse; la metodología de reservas estatutarias (SAP, Statutory Accounting Principles) y los elementos sobre los cuales se pretende valorar de acuerdo a GAAP; y finalmente la manera de pasar de una valuación a la otra.

En el tercer capítulo de este trabajo se determinan las hipótesis o supuestos para la valuación de reservas bajo GAAP. Se muestran los resultados de un estudio de caducidad o persistencia y un análisis de gastos para DAC. Estos estudios sirven como base para definir los supuestos que tomados de la experiencia de la compañía definen el futuro de la misma al hacer las proyecciones de reservas GAAP.

En el cuarto y último capítulo se calculan los factores de reservas necesarios para la valuación de reservas GAAP y DAC, y se compara la reserva obtenida de la valuación de reservas estatutarias SAP contra la reserva según GAAP, analizándose los resultados obtenidos y haciendo las conclusiones correspondientes.

Este trabajo pretende mostrar a todos aquellos actuarios involucrados en la implantación de Estados Financieros de acuerdo a GAAP dentro de una compañía de seguros; la manera práctica de cómo aplicar los métodos de cálculo de reservas bajo GAAP, de acuerdo a las normas contables SFAS60 para seguros de larga duración. Vale la pena señalar que este trabajo no pretende enseñar toda la legislación y reglas que existen sobre GAAP, sino ayudar a la implantación de las mismas.



# CAPÍTULO 1

## ANTECEDENTES

Antes de implantar la valuación de reservas de vida, según la metodología de reservas GAAP, dentro una compañía de seguros, debemos llevar a cabo algunos análisis y revisiones importantes. Primeramente necesitamos conocer la cartera de seguros de vida de la compañía. Posteriormente determinaremos los planes más representativos de la cartera, y finalmente identificaremos bajo que principios de contabilidad GAAP deben valorarse. Utilizaremos un cuadro que nos ayudará a identificar la metodología a utilizar dependiendo del tipo de plan de que se trate.

### 1.1 Definiciones.

Considero importante antes de iniciar con el desarrollo de este trabajo, aclarar algunos conceptos que estaremos usando a lo largo del mismo. Cuando hagamos referencia a GAAP<sup>1</sup> nos estaremos refiriendo al conjunto de normas contables que se utilizan para valorar las reservas de los diferentes tipos de seguros de vida según los Principios de Contabilidad Generalmente Aceptados. En especial SFAS60<sup>2</sup> son las Normas de Contabilidad Financiera que se utilizan para valorar los planes de vida individual tradicional con plazo de seguro mayor a un año. Las reservas DAC<sup>3</sup>, forman parte de las normas de contabilidad que se aplican para valorar la reserva de los Gastos de Adquisición Diferibles.

Cuando hagamos referencia a los supuestos PAD<sup>4</sup> nos estaremos refiriendo a la Provisión para las posibles Desviaciones Adversas al riesgo que tengan los supuestos que determinemos para la valuación de la reserva GAAP. Por último, SAP<sup>5</sup> es la metodología que se utiliza actualmente para valorar las reservas estatutarias de las compañías de seguros.

### 1.2 Composición de la cartera en vigor.

Un cuadro con la descripción de los planes que maneja la compañía es muy útil para darnos cuenta cualitativamente qué tipos de productos son los que más vende (temporales, vitalicios, etc.), cuáles planes sigue vendiendo y cuáles ha dejado de vender. Más adelante, estos datos serán indispensables para ayudarnos a identificar los planes más representativos. Ver cuadro 1.2.1

<sup>1</sup> GAAP, Generally Accepted Accounting Principles (Principios de Contabilidad Generalmente Aceptados)

<sup>2</sup> SFAS60, Statement of Financial Accounting Standards # 60 (Normas del Estado de Contabilidad Financiera # 60)

<sup>3</sup> DAC, Deferred Acquisition Costs (Costos de Adquisición Diferibles)

<sup>4</sup> PAD, Provision for Adverse Deviation (Provisión para la Desviación Adversa al Riesgo)

<sup>5</sup> SAP, Statutory Accounting Principles (Principios de Contabilidad Estatutaria)

Cuadro 1.2.1

| Descripción de planes |               |                    |            |                    |
|-----------------------|---------------|--------------------|------------|--------------------|
| Clave de plan         | Venta durante | Tipo de Seguro     | Pzo. Pago  | Pzo. Seguro        |
| T2020P                | 96-a la fecha | Temporal           | 20 Años    | 20 Años            |
| T2020B                | 97-a la fecha | Temporal           | 20 Años    | 20 Años            |
| T55S                  | 96-a la fecha | Temporal           | 5 Años     | 5 Años             |
| VPL265V               | 98-a la fecha | VPL                | 2 Años     | 65-Edad de Cálculo |
| T55I                  | 96-a la fecha | Temporal           | 5 Años     | 5 Años             |
| PPAT                  | 78-97         | Temporal           | 10 Años    | 10 Años            |
| PPAOV                 | 78-97         | OV                 | Vitalicio  | Vitalicio          |
| MT                    | 97-a la fecha | Temporal           | 15 Años    | 15 Años            |
| MOV                   | 97-a la fecha | OV                 | Vitalicio  | Vitalicio          |
| DCP                   | 78-97         | Dotal a Corto Pzo. | 1-12 Meses | 1-12 Meses         |

\* La diferencia entre los temporales con el mismo plazo de pago y seguro son las comisiones.

\*\* Algunos planes existen tanto en moneda nacional como en dólares.

Se presenta únicamente la cartera de vida individual tradicional, caso de estudio de este trabajo. Entre lo más importante que podemos observar del cuadro anterior, es que la gran mayoría de los planes son temporales y que probablemente sus características técnicas sean muy parecidas. Podemos ver también que es una cartera muy joven, salvo algunos planes con emisión antigua que prácticamente hace algunos años dejaron de venderse.

Para poder obtener más información sobre la cartera, un cuadro de valuación de reservas estatutarias es lo más recomendable, ya que podemos obtener de él información cuantitativa sobre cada plan y qué tanto representa para la compañía. Ver cuadro 1.2.2

Cuadro 1.2.2

| Cuadro de Reservas Estatutarias en vigor al 31/12/99 |                   |                |                   |                |                   |                   |                  |                |
|--|-------------------|----------------|-------------------|----------------|-------------------|-------------------|------------------|----------------|
| Clave de plan  | Número de Pólizas | %              | * Suma Asegurada  | %              | Reserva Media     | Pma. Neta Dif.    | Reserva Neta     | %              |
| NIN  |                   |                |                   |                |                   |                   |                  |                |
| T2020P   | 25,575            | 54.29%         | 3,154,249         | 31.40%         | 14,872,884        | 8,217,031         | 6,655,853        | 67.38%         |
| T2020B   | 18,437            | 39.14%         | 5,744,619         | 57.19%         | 10,409,645        | 7,727,645         | 2,682,000        | 27.15%         |
| T55S   | 2,620             | 5.56%          | 1,000,060         | 9.96%          | 1,256,843         | 977,758           | 279,085          | 2.83%          |
| MT   | 122               | 0.26%          | 58,593            | 0.58%          | 162,581           | 162,051           | 530              | 0.01%          |
| T55I   | 113               | 0.24%          | 27,135            | 0.27%          | 75,092            | 45,551            | 29,541           | 0.30%          |
| MOV  | 25                | 0.05%          | 12,150            | 0.12%          | 33,712            | 33,602            | 110              | 0.00%          |
| PPAT   | 101               | 0.21%          | 2,282             | 0.02%          | 66,853            | 19,566            | 47,287           | 0.48%          |
| PPAOV  | 40                | 0.08%          | 900               | 0.01%          | 26,384            | 3,861             | 22,523           | 0.23%          |
| DCP  | 2                 | 0.00%          | 46                | 0.00%          | 1,342             | 196               | 1,146            | 0.01%          |
| VPL265   | 28                | 0.06%          | 2,303             | 0.02%          | 69,976            | 0                 | 69,976           | 0.71%          |
| SUBT.  | 47,063            | 99.91%         | 10,002,337        | 99.57%         | 26,975,312        | 17,187,261        | 9,788,051        | 99.09%         |
| DLS  |                   |                |                   |                |                   |                   |                  |                |
| MT   | 24                | 0.05%          | 32,861            | 0.33%          | 149,434           | 75,867            | 73,567           | 0.74%          |
| MOV  | 17                | 0.04%          | 10,064            | 0.10%          | 40,796            | 24,603            | 16,193           | 0.16%          |
| SUBT.  | 41                | 0.09%          | 42,925            | 0.43%          | 190,230           | 100,470           | 89,760           | 0.91%          |
| <b>TOTAL</b>   | <b>47,104</b>     | <b>100.00%</b> | <b>10,045,262</b> | <b>100.00%</b> | <b>27,165,542</b> | <b>17,287,731</b> | <b>9,877,811</b> | <b>100.00%</b> |

\* Suma Asegurada en Miles de Pesos

\*\* Datos Obtenidos de la Cartera Real de una Compañía de Seguros

\*\*\* Tipo de Cambio: 9.4986 a diciembre de 1999.

Este cuadro nos proporciona una idea más clara sobre la composición de la cartera ya que podemos observar el volumen de pólizas y el volumen de reserva de cada plan, así como la proporción que representa del total de la cartera. Como podemos ver sólo una pequeña proporción pertenece a moneda dólares. Estos cuadros serán la base para la identificación de los planes modelo (o más representativos) de la cartera de la compañía.

### 1.3 Planes representativos a modelar.

Lo que normalmente se hace o se debe hacer, es tomar todos los planes de la cartera en vigor, agruparlos de acuerdo a los que tengan características similares por bloque de seguro y definir el modelo considerando los más representativos o los que sean más significativos para la cartera.

Nosotros debemos valorar toda la cartera en vigor de la compañía, sin embargo, en nuestro caso particular, podemos observar del cuadro de reservas estatutarias 1.2.2, que tres planes representan el 97.36% de la cartera, por lo que consideramos que estos planes serán suficientes para reproducir confiablemente la reserva GAAP de la compañía, es decir; no sería necesario redoblar esfuerzos para valorar planes que realmente generan muy poca reserva para la compañía.

**Cuadro 1.3.1**

| Clave de plan          | Reserva          | %              |
|------------------------|------------------|----------------|
| <b>Moneda Nacional</b> |                  |                |
| T2020P                 | 6,655,853        | 67.38%         |
| T2020B                 | 2,682,000        | 27.15%         |
| T555                   | 279,085          | 2.83%          |
| Subtotal               | 9,616,938        | 97.36%         |
| Restantes              | 171,113          | 1.73%          |
| <b>Total MN</b>        | <b>9,788,051</b> | <b>99.09%</b>  |
| <b>Moneda Dólares</b>  |                  |                |
| MTT                    | 73,567           | 0.74%          |
| MIOV                   | 16,193           | 0.16%          |
| <b>Total DLS</b>       | <b>89,760</b>    | <b>0.91%</b>   |
| <b>Total</b>           | <b>9,877,811</b> | <b>100.00%</b> |

Del cuadro anterior podemos observar que la cartera de dólares genera muy poca reserva, al igual que los planes restantes en moneda nacional; si tuviéramos una cartera en vigor más uniformemente distribuida, se debería evaluar la reserva GAAP para todos los planes.

Al decir representativos nos referimos a los planes que por su volumen de reserva, suma asegurada o número pólizas sean los más significativos de la cartera en vigor y sobre los cuales se puedan modelar o reproducir la reserva de los planes menos representativos, dependiendo de sus características técnicas.

A continuación presentamos los planes agrupados por bloque de seguro.

| Cuadro de planes por bloque de seguro |                 |               |         |                |              |        |
|---------------------------------------|-----------------|---------------|---------|----------------|--------------|--------|
| Clave de plan                         | Plazo de Seguro | Plazo de Pago | Pólizas | Suma Asegurada | Reserva Neta | %      |
| <b>Dotal a Corto plazo</b>            |                 |               |         |                |              |        |
| DCP                                   | 1-12meses       | 1-12meses     | 2       | 46             | 1,143        | 0.01%  |
| <b>Temporales a 5 años</b>            |                 |               |         |                |              |        |
| T55S                                  | 5               | 5             | 2,620   | 1,000,060      | 279,084      | 2.83%  |
| T55I                                  | 5               | 5             | 113     | 27,135         | 29,541       | 0.30%  |
| <b>Temporales a 10 años</b>           |                 |               |         |                |              |        |
| PPAT                                  | 10              | 10            | 101     | 2,282          | 47,287       | 0.48%  |
| <b>Temporales a 15 años</b>           |                 |               |         |                |              |        |
| MT(MN)                                | 15              | 15            | 122     | 58,593         | 530          | 0.01%  |
| MT(DLS)                               | 15              | 15            | 24      | 33,861         | 73,567       | 0.74%  |
| <b>Temporales a 20 años</b>           |                 |               |         |                |              |        |
| T2020P                                | 20              | 20            | 25,575  | 3,154,249      | 6,655,853    | 67.38% |
| T2020B                                | 20              | 20            | 18,437  | 5,744,619      | 2,682,001    | 27.15% |
| <b>Vida pngos limitados</b>           |                 |               |         |                |              |        |
| VPL265                                | 65-x            | 65-x          | 28      | 2,303          | 69,977       | 0.71%  |
| <b>Ordinario de Vida</b>              |                 |               |         |                |              |        |
| PPAOV                                 | 99-x            | 99-x          | 40      | 900            | 22,523       | 0.23%  |
| MOV (MN)                              | 99-x            | 99-x          | 25      | 12,150         | 110          | 0.00%  |
| MOV(DLS)                              | 99-x            | 99-x          | 17      | 10,064         | 16,193       | 0.16%  |

Del cuadro anterior podemos darnos cuenta que los planes con mayor peso dentro de la cartera son los temporales a veinte años. En este caso debemos modelarlos por separado, ya que cada uno de ellos, por si solo, es lo suficientemente significativo; cada uno de ellos tiene supuestos diferentes por lo que nos hará más realistas las proyecciones de reservas GAAP.

Otro plan que vale la pena modelar es el temporal a cinco años (T55S), ya que aunque su porcentaje de representatividad es bajo, con éste complementaríamos casi el 100% de la cartera de la compañía. Este plan está agrupado con otro temporal a cinco años que realmente es insignificante con respecto a la cartera total, por lo que no tendría mayor efecto excluir este último, de la valuación de reservas GAAP. Así pues, sólo tomaríamos el primer plan del bloque de temporales a cinco años.

Otra cosa importante es que tanto los temporales a veinte como el temporal a cinco años que hemos decidido valuar, son planes jóvenes que la compañía esta vendiendo con gran volumen en poco tiempo, por lo que es mejor valuar un plan que se vende actualmente bien y que con el tiempo seguirá creciendo, a valuar un plan en vigor que ya no se vende, que su volumen de reserva es poco significativo y que con el tiempo se cancelará o se terminará su vigencia. Aunque si estos planes son lo suficientemente importantes, habría que modelarlos.

No quisiera dejar de mencionar que en caso de decidir valorar toda la cartera tendríamos que modelar los planes poco significativos o con poco volumen de reserva o pólizas, de acuerdo a los planes más representativos del bloque de seguro, por ejemplo:

| Plan Modelo                           | Planes a modelar             |
|---------------------------------------|------------------------------|
| Dótales a corto plazo = DCP           | DCP                          |
| Temporales a 5 años = T55S            | T55S, T55I                   |
| Temporales a 20 años = T2020P, T2020B | T2020P, T2020B, MT(MN), PPAT |
| Vida pagos limitados = VPL265         | VPL265                       |
| Ordinarios de Vida = PPAOV            | PPAOV, MOV(MN)               |

\* Esto es sólo para moneda nacional, para dólares tendríamos que hacer algo similar.

Cabe mencionar, que para cada plan que incluyamos en la valuación de reservas GAAP, tenemos que determinar sus supuestos financieros y demográficos, por lo que entre más planes tengamos es mayor la revisión y análisis de los mismos. Así pues, incluir todos los planes, implicaría aumentar esfuerzos para determinar supuestos de planes que no habíamos incluido antes y que son poco significativos para la compañía, aunque tendríamos un resultado más preciso.

En conclusión, únicamente tomaremos en cuenta los planes temporales a veinte y cinco años para la valuación de la reserva GAAP, modelados cada uno por separado sin hacer agrupaciones por bloque de seguro.

| Clave de plan | % Reserva |
|---------------|-----------|
| T2020P        | 67.38%    |
| T2020B        | 27.15%    |
| T55S          | 2.83%     |
| TOTAL         | 97.36%    |

#### 1.4 Identificación de la metodología GAAP a aplicar.

Una vez que sabemos a qué planes les valuaremos su reserva GAAP, tenemos que identificar qué principios de contabilidad aplicaremos. Para esto nos apoyaremos en un esquema el cual seguiremos paso a paso, todo dependerá de las características del plan a valorar. Sabemos que los planes a modelar son dos planes temporales a 20 años y un plan temporal a 5 años, ambos pertenecientes al seguro de vida individual tradicional.

Las características de los planes que vamos a modelar, tanto para el temporal a veinte años como para el temporal a cinco años, son las siguientes:

| Contrato de corta duración   | Contrato de larga duración  |
|--|---|
| <ul style="list-style-type: none"> <li>• Seguros de crédito.</li> <li>• Seguros Dótales a Corto Plazo.</li> <li>• Seguros de Vida Grupo y Colectivo.</li> <li>• Seguros de Salud y Accidentes Personales.</li> <li>• Seguros Temporales a un año.</li> </ul> | <ul style="list-style-type: none"> <li>• Seguros Ordinarios de Vida.</li> <li>• Seguros Vida Pagos Limitados.</li> <li>• Seguros de Vida Temporales mayores a un año.</li> <li>• Seguros Dótales Mixtos.</li> <li>• Anualidades.</li> <li>• Seguros de renovación garantizada de accidentes y salud.</li> </ul> |

SFAS60, Statement of Financial Accounting Standards No. 60

Finalizaremos el presente capítulo concluyendo que los principios de GAAP que aplicaremos para valuar los planes modelo o más representativos, serán los correspondientes a las Normas de Contabilidad Financiera No. 60 (SFAS60). Ver anexo 1.

## CAPÍTULO 2

### METODOLOGÍA DE RESERVAS

En toda valuación de reservas GAAP, es importante conocer los fundamentos de valuación SAP, al menos como referencia; hay que recordar que los supuestos SAP están determinados pensando en la solvencia de la compañía, por lo cual resultan ser más conservadores, mientras que los correspondientes a GAAP están basados en los análisis de rentabilidad, por lo que estos supuestos resultan ser más realistas.

Así mismo revisaremos los componentes de valuación GAAP que se aplicarán a los planes identificados como más representativos. Finalmente y para terminar con este capítulo, definiremos lo que tenemos que hacer para pasar de un método de valuación de reservas (SAP) a otro (GAAP), dependiendo de los planes a valorar y la metodología GAAP a aplicar.

#### 2.1 Componentes de valuación SAP.

Estos componentes de valuación son la base de la constitución de reservas en las compañías de seguros por ley en México; y pueden tener ciertas variaciones dependiendo de cada compañía. En particular estos son los componentes de valuación sobre los cuales está valuada la cartera de la compañía con la que estamos trabajando.

##### 2.1.1 Reglas aplicables.

Ley General de Instituciones y Sociedades Mutualistas de Seguros y circulares emitidas por la Comisión Nacional de Seguros y Fianzas.

##### 2.1.2 Metodología.

- ◆ El detalle se especifica en la nota técnica de cada plan<sup>7</sup>, en este caso las notas técnicas de los temporales a veinte y cinco años que vamos a valorar. Es importante mencionar que para efectos de este trabajo se tomarán los componentes de valuación de la nota técnica original, sin tomar en cuenta las actualizaciones por cambios de reglamentación en la constitución de la reserva. Sin embargo, se mencionarán estos cambios cuando sea necesario.

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<sup>7</sup> Registradas ante la Comisión Nacional de Seguros y Fianzas

- ◆ La compañía decidió usar el Método de cálculo de reservas a Año Temporal Preliminar Modificado<sup>8</sup>. Los factores de reserva, tanto para los temporales a veinte años como para el temporal a cinco años, están calculados bajo este método. Cabe mencionar que actualmente la CNSF esta por cambiar los métodos de constitución de reserva mínima.
- ◆ Método de valuación de reservas a Reserva Media.
- ◆ La Prima Neta Diferida es deducida de la reserva para pólizas con forma de pago fraccionada.

### 2.1.3 Hipótesis financieras y demográficas.

|            |   |
|------------|---|
| Interés    | Para los temporales a veinte años la compañía decidió utilizar una tasa de interés técnico del 6% y para los temporales a cinco años del 8%. Cabe mencionar que estas tasas estaban autorizadas por la CNSF hasta antes del 22/May/2002 (Diario Oficial de la Federación DOF, de ese mismo día). A partir de esta fecha la tasa de interés técnico máxima para seguros en moneda nacional es del 5.5%, y en dólares del 4.0%. |
| Mortalidad | Se decidió utilizar la tabla de Experiencia Mexicana Básica 1982-1989 para cualquier plan. Cabe mencionar que por ley a partir del 1/Abril/2000 (DOF del 31/Dic/1999) la tabla de mortalidad que debe utilizarse para nuevos productos es la tabla de mortalidad individual CNSF 2000 - I (1991-1998). Ver anexo 2.   |

### 2.1.4 Cálculo de la reserva.

Sean:

- x = Edad alcanzada
- t = Año póliza.
- n = Duración del plan.
- m = Duración del pago de primas. En este caso m = n.
- lx = Número de vivos a edad x

$${}_{t|}V_{x:n} = \text{Reserva terminal de la póliza en el año } t$$

<sup>8</sup> Este método disminuye la reserva del primer año (reserva mínima que la CNSF permite constituir, Diario Oficial de la Federación del 18/Dic/85) para ayudar a la cía. a hacerle frente a los altos gastos de adquisición del 1er año.



${}_tW_{x:n}$  = Reserva Media de la póliza en el año  $t$ .

Los Valores Conmutados están calculados asumiendo un promedio en el número de vivos entre edad  $x$  y edad  $x+1$ :

$$L_x = (l_x + l_{x+1}) * 0.5$$

Los factores de reserva están determinados de la siguiente manera:

$${}_tV_{x:n} \begin{cases} \text{Si } t = 1 & {}_tV_{x:n} = 0 \\ \text{Si } t > 1 & {}_tV_{x:n} = 1000 * A_{x+t:n-t} - P_{x+t:n-t} * u_{x+t:n-t} \end{cases}$$

donde

$$\text{Prima Neta de Primer Año} = P_{x:1} = 1000 \frac{C_x}{D_x}$$

y

$$\text{Prima Neta de Renovación} = P_{x+1:n-1} = \frac{A_{x:n} - P_{x:1}}{a_{x:n-1}}$$

La reserva media es obtenida de la siguiente forma:

$${}_tW_{x:n} \begin{cases} \text{Si } t = 1 & {}_tW_{x:n} = 0.5 * P_{x:1} \\ \text{Si } t > 1 & {}_tW_{x:n} = ({}_{t-1}V_{x:n} + {}_tV_{x:n} + P_{x+1:n-1}) * 0.5 \end{cases}$$

Con estas fórmulas son calculados los factores de primas netas, primas de tarifa y reservas que son la base de la valuación de reservas SAP.

### **2.1.5 Definición del vigor de pólizas.**

Las pólizas que tienen un retraso en el pago de prima, de acuerdo al plazo convenido, el cual no podrá ser menor a tres días ni mayor a treinta, deben cancelarse por ley, ya que es el período que la Ley sobre el Contrato de Seguro<sup>9</sup> otorga para el pago de primas y después de éste ya no existe riesgo para la compañía. Por consiguiente éstas no estarán en vigor para efectos de valuación. La valuación debe realizarse sobre todas aquellas pólizas que estén en vigor al momento de la valuación.

## **2.1 Componentes de valuación según principios contables GAAP.**

### **2.2.1 Reserva de beneficios.**

#### **2.2.1.1 Reglas aplicables.**

Norma de Contabilidad Financiera No. 60 (SFAS60), párrafo 21-26

#### **2.2.1.2 Metodología.**

La guía de auditoría específica que la ganancias de cualquier período reportado deben ser el resultado de sincronizar (hacer corresponder) los costos y gastos de la compañía con los ingresos de prima asociados, es decir, los beneficios y los gastos deberían ser reconocidos en el mismo período contable en el cual los ingresos de prima asociados son reconocidos. El mecanismo para alcanzar esta sincronización de beneficios y gastos con los ingresos de prima es la base de cálculo de reservas GAAP.

#### **2.2.1.3 Supuestos.**

La mejor estimación de tasas de inversión, mortalidad, caducidad y gastos de mantenimiento, con una provisión para el riesgo de desviación adverso. El cálculo de la reserva depende de los efectos de estos supuestos.

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<sup>9</sup> Artículo 40 de la Ley sobre el Contrato de Seguro, actualizado el 02/01/02

La mejor estimación de supuestos refleja el resultado más probable y debe ser razonable y realista. Al establecer la mejor estimación de supuestos, se debe considerar las características y magnitudes del negocio de la compañía; la edad de la compañía; sus tasas de crecimiento; la experiencia previa de la compañía considerada de importancia relevante y las tendencias de esa experiencia. No hay necesariamente una relación entre la mejor estimación de supuestos y los usados para la tarificación del producto.

#### **2.2.1.4 PAD(Provisión para el riesgo de Desviación Adversa).**

La provisión para el riesgo de desviación adversa (PAD), debe ser establecida en consideración al grado de riesgo al cual el supuesto está sujeto en su totalidad, y a su duración en el futuro, y debe ser razonable en las circunstancias. Los supuestos que incluye PAD deben llevar una razonable relación a la mejor estimación de supuestos.

#### **2.2.1.5 Cálculo de la reserva.**

Las fórmulas, así como el cálculo de la reserva serán abordadas en el capítulo cuatro de este trabajo, ya que calcular y analizar las reservas es el objetivo de este trabajo.

### **2.2.2 Reserva de gastos.**

#### **2.2.2.1 Reglas aplicables.**

Norma de Contabilidad Financiera No. 60 (SFAS60), párrafo 28-31

#### **2.2.2.2 Metodología.**

Los Costos de Adquisición deben ser capitalizados y cargados a gastos en proporción al reconocimiento de prima ingresada. Los Costos de Adquisición deben ser cargados a gastos usando métodos que incluyen los mismos supuestos usados en la estimación de la reserva de beneficios. Los costos de adquisición no amortizados deben ser clasificados como un activo. Los activos DAC son amortizados a cero sobre el período.

### 2.2.2.3 Cálculo de la reserva.

Las fórmulas, así como el cálculo de la reserva serán abordadas en el capítulo 4 de este trabajo, ya que calcular y analizar las reservas es el objetivo de este trabajo.

## 2.2.3 Principio Lock-in (Hipótesis fijas).

### 2.2.3.1 Reglas aplicables.

Norma de Contabilidad Financiera No. 60 (SFAS60), párrafo 21

### 2.2.3.2 Metodología.

Los supuestos determinados originalmente aplicados al vigor de pólizas, deben continuar siendo usados en los subsecuentes períodos contables (a no ser que una prima deficiente exista<sup>10</sup>) para determinar cambios en la reserva de beneficios.

Con esto el actuario se asegurará que las hipótesis sean apropiadas para las emisiones nuevas, en caso de que no sean las adecuadas, se determinarán las nuevas y se recalculará de nuevo la reserva.

Con base en esto, es necesario hacer pruebas de reconocimiento de pérdidas<sup>11</sup> para evaluar si las hipótesis siguen siendo adecuadas.

## 2.1 Pasos necesarios para la conversión de SAP a GAAP.

Necesitamos determinar las mejores estimaciones de supuestos, así como calcular los factores de reserva y de prima, y aplicarlos a la cartera en vigor para obtener la reserva de beneficios y de gastos. El vigor de la cartera para GAAP será el mismo que para SAP.

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<sup>10</sup> Cuando el valor presente de la prima bruta futura no es suficiente a) para cubrir el valor presente de beneficios futuros a ser pagados y b) para recuperar los costos de adquisición no amortizados. SFAS60 párrafo 35.

<sup>11</sup> Son pruebas que se llevan a cabo para medir si existe o no una deficiencia en el monto neto constituido de reserva, dicho monto debe ser suficiente para cubrir las obligaciones futuras.

Se calcularán factores por plan. Los factores de reserva de gasto variarán dependiendo del plazo de seguro de la póliza, un ajuste de aproximación será necesario para estos factores. Los factores de reserva terminal estarán calculados usando reserva a prima neta nivelada. La reserva será calculada a reserva media interpolada, es decir, por promedio entre las reservas inicial y terminal, basada en el número de meses para el próximo aniversario. La prima neta diferida será deducida de la reserva para pólizas con forma de pago fraccionado.

El análisis de los cálculos realizados, así como de los resultados obtenidos, se explicarán en el capítulo cuatro. Se utilizarán hojas electrónicas para efectuar dichos cálculos.

## CAPÍTULO 3

### DETERMINACIÓN DE SUPUESTOS GAAP

Se recomienda que para la determinación de supuestos GAAP, se realicen estudios con la historia de la compañía, y que en caso de no tener suficientes elementos se tomen los supuestos del mercado asegurador. Debemos tomar en cuenta que estamos implantando el método de reservas GAAP, en una compañía realmente pequeña y que por esta razón, no tendremos la historia suficiente para basar todos nuestros estudios y análisis en su propia experiencia.

En compañías grandes donde se tiene suficiente experiencia y un volumen considerable de cartera, es factible hacer el análisis de los supuestos de la propia experiencia de la compañía.

Cabe destacar, que a diferencia de la valuación de reservas estatutarias que utiliza hipótesis demasiado conservadoras; la reserva según GAAP utiliza hipótesis realistas, con las que se constituyen las reservas que realmente se necesitan.

Por otra parte la selección de los supuestos bajo estimaciones realistas dependerá en gran manera del juicio del actuario, lo que representa una gran responsabilidad. Además, existen ciertas bases sobre las cuales realizaremos la elección de los mejores supuestos.

Es importante mencionar que se pretende implantar la valuación de reservas GAAP a partir del 31 de diciembre de 1999, ya que los análisis de los supuestos estarán determinados a partir de esta fecha.

Finalmente, una vez determinados los mejores supuestos, debemos agregar un margen para posibles desviaciones adversas al riesgo.

#### 3.1 Tasas de inversión.

El estudio sobre las tasas de interés prácticamente está basado en las tendencias de los rendimientos reales obtenidos por la compañía y las expectativas económicas en el mediano y largo plazo. Hay que tomar en cuenta que la elección de tasas de interés para seguros temporales a largo plazo (que es nuestro caso), juega un papel importante en la selección de los supuestos.

El siguiente cuadro muestra las tasas de rendimiento reales, y las esperadas en el Plan de Negocios (PN)<sup>12</sup> de la compañía con la que estamos trabajando:

Cuadro 3.1.1

| Año  | 87    | 88    | 89   | 90   | 91   | 92   | 93   | 94   | 95   | 96    | 97   | 98   | 99   | 00   | 01   | 02   | 03   |
|------|-------|-------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Real | 150.9 | 101.4 | 47.7 | 39.1 | 23.3 | 17.3 | 16.7 | 15.1 | 54.0 | 33.99 | 23.4 | 24.4 |      |      |      |      |      |
| PN95 |       |       |      |      |      |      |      | 10.0 | 26.0 |       |      |      |      |      |      |      |      |
| PN96 |       |       |      |      |      |      |      |      | 26.0 | 30.0  |      |      |      |      |      |      |      |
| PN97 |       |       |      |      |      |      |      |      |      | 30.0  | 22.0 | 20.0 | 20.0 | 19.0 | 20.0 |      |      |
| PN98 |       |       |      |      |      |      |      |      |      |       | 24.0 | 19.0 | 17.0 | 15.0 | 23.0 | 20.0 |      |
| PN99 |       |       |      |      |      |      |      |      |      |       |      | 22.0 | 20.0 | 19.0 | 17.0 | 17.0 | 17.0 |

Como los planes que vamos a modelar fueron emitidos a partir de 1996, nos basaremos (para la realización del estudio) en las tasas de rendimiento obtenidas desde de 1996 y las del último plan de negocios de la compañía.

La base de supuestos de las proyecciones del Plan de Negocios, reduce las tasas de rendimiento a una tasa última del 10% (perspectiva económica de la compañía a mediano plazo). Los tasas por cada año calendario para propósitos de GAAP podrían por consiguiente ser estimados como:

Cuadro 3.1.2

| Año  | 96 | 97 | 98 | 99   | 00   | 01   | 02   | 03   | 04   | 05   | 06   | 07   | 08   | 09   | 10*  |
|------|----|----|----|------|------|------|------|------|------|------|------|------|------|------|------|
| PN99 |    |    |    | 20.0 | 19.0 | 18.0 | 17.0 | 16.0 | 15.0 | 14.0 | 13.0 | 12.0 | 11.0 | 10.0 | 10.0 |

Las tasas del cuadro anterior se obtuvieron tomando del cuadro 3.1.1 las tasas de rendimiento del Plan de Negocios de la compañía, y se van disminuyendo en un punto porcentual año con año hasta llegar a la tasa última de rendimiento del 10%.

Para propósitos de reserva se toma la tasa promedio de inversión entre cada año calendario (suponiendo que la emisión se realiza a la mitad del año), por lo que las tasas supuestas por año póliza esperamos sean estas:

Cuadro 3.1.3

| Año  | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15*  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| PN99 | 19.5 | 18.5 | 17.5 | 16.5 | 15.5 | 14.5 | 13.5 | 12.5 | 11.5 | 10.5 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |

Ahora bien, estas tasas determinan el producto financiero de la compañía, por lo cual no debemos tomar todo el rendimiento. Debemos dejar un margen para la utilidad por producto financiero.

<sup>12</sup> Plan de Negocios o Business Plan, proyección del negocio a tres o cinco años.

De acuerdo a lo anterior, podemos tomar para los temporales a veinte años el 8% y para el temporal a cinco el 10%, es decir, dos puntos porcentuales arriba de la tasa para reservas SAP. De esta forma las tasas que usaremos para la valuación de reservas GAAP serían las siguientes:

| Año | 1    | 2    | 3    | 4    | 5    | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15+ |
|-----|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| T20 | 8.0  | 8.0  | 8.0  | 8.0  | 8.0  | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| T5  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |     |     |     |     |     |     |     |     |     |     |

### 3.2 Mortalidad.

Para determinar qué tabla de mortalidad utilizar para el cálculo de la reserva bajo los principios GAAP, debemos basarnos en nuestra mejor estimación de la mortalidad esperada. Existen ya dentro del sector asegurador tablas de mortalidad basadas en estimaciones reales de la misma que podríamos utilizar; elaboradas por la Asociación Mexicana de Instituciones de Seguros (AMIS), la Asociación Mexicana de Actuarios (AMA) y la Comisión Nacional de Seguros y Fianzas (CNSF); sin embargo, también podríamos tomar la experiencia de la compañía para la elaboración de una tabla de mortalidad, o bien la experiencia de una muestra representativa.

Para el análisis de la mortalidad nos basaremos en seis consideraciones importantes:

- Tipo de compañía
- Tipo de suscripción
- Duración y tipo de seguros
- Agrupaciones por bloques de seguro
- Mortalidad en seguros renovables.
- Mortalidad en conversiones

#### Tipo de compañía:

La compañía con la que estamos trabajando es pequeña, la cual genera poca experiencia de mortalidad comparada con otras, por lo que la experiencia propia no sería suficiente para poder pronosticar con certeza la mortalidad. Debido a esto tomaremos la tabla de mortalidad utilizada para la valuación de reservas SAP (Exp. Méx. Básica 82-89), la cual está basada en personas aseguradas que reflejan la experiencia que deseamos obtener. Ver anexo 2.



**Tipo de suscripción:**

Es claro que para algunos planes se tenga una mejor selección o suscripción del negocio que para otros; por lo que ajustaremos la mortalidad, de acuerdo a un estudio sobre la siniestralidad esperada contra la siniestralidad real para varios años de experiencia. De esta forma podremos definir factores de selección para cada plan modelado, que se aplicaran a la tabla definida anteriormente. Esto no quiere decir que se generará una tabla de mortalidad especial, si no más bien se ajustará de acuerdo a los planes que tienen mejor selección que otros.

El cuadro siguiente muestra un comparativo entre la mortalidad esperada y la mortalidad real, para el plan T2020P.

| Clave de plan T2020P                |                   |             |                      |                     |                     |                     |                   |                      |  |
|-------------------------------------|-------------------|-------------|----------------------|---------------------|---------------------|---------------------|-------------------|----------------------|--|
| Cifras al 31 de Diciembre de 1999   |                   |             |                      |                     |                     |                     |                   |                      |  |
| Año de Emisión                      | Pólizas Emiitidas | Edad Prom.  | Siniestros Esperados |                     |                     |                     |                   | Total                |  |
|                                     |                   |             | 1er. Año             | 2do. Año            | 3er Año             | 4to Año             | 5to año           |                      |  |
| 1996                                | 7,336             |             | 1,747,961.03         | 2,214,326.69        | 2,542,249.99        | 2,650,140.23        | 674,191.97        | 9,228,869.91         |  |
| 1997                                | 13,914            |             | 2,189,642.54         | 2,759,391.04        | 2,945,923.45        | 1,137,141.85        | 15.12             | 9,230,516.00         |  |
| 1998                                | 17,545            |             | 2,232,167.93         | 2,579,679.32        | 7,152,328.25        | 52.65               | 0.00              | 5,964,228.15         |  |
| 1999                                | 20,776            |             | 2,014,222.11         | 407,493.23          | 20.49               | 0.00                | 0.00              | 2,821,735.83         |  |
| <b>Total</b>                        | <b>52,235</b>     | <b>36.8</b> | <b>8,183,993.61</b>  | <b>8,360,890.28</b> | <b>6,638,524.18</b> | <b>3,987,534.73</b> | <b>674,207.69</b> | <b>27,844,149.89</b> |  |
| <b>Siniestros Reales</b>            |                   |             | <b>4,121,191.52</b>  | <b>5,891,882.02</b> | <b>5,660,594.00</b> | <b>3,959,468.44</b> | <b>675,761.00</b> | <b>26,308,896.98</b> |  |
| <b>Utilidad o Pérdida por Mort.</b> |                   |             | <b>4,062,802.09</b>  | <b>2,469,008.26</b> | <b>977,930.18</b>   | <b>28,066.29</b>    | <b>(1,853.91)</b> | <b>7,536,252.91</b>  |  |
| <b>FACTORES DE SELECCIÓN:</b>       |                   |             | <b>50.36%</b>        | <b>70.47%</b>       | <b>85.17%</b>       | <b>69.30%</b>       | <b>100.23%</b>    | <b>72.94%</b>        |  |

Observamos que en los primeros tres años la siniestralidad real es más baja que la siniestralidad esperada, y a partir del cuarto año podemos ver que la siniestralidad real es prácticamente la esperada. Estos resultados son razonables, por lo que podemos usar estos porcentajes como factores de selección para el plan T2020P:

| Año                        | 1          | 2          | 3          | 4-20        |
|----------------------------|------------|------------|------------|-------------|
| <b>Factor de Selección</b> | <b>50%</b> | <b>70%</b> | <b>85%</b> | <b>100%</b> |

A continuación tenemos el comparativo entre la mortalidad esperada y la mortalidad real, para el plan T2020B.

| Clave de plan T2020B                |                   |             |                      |                     |                     |                   |             |                      |  |
|-------------------------------------|-------------------|-------------|----------------------|---------------------|---------------------|-------------------|-------------|----------------------|--|
| Cifras al 31 de Diciembre de 1999   |                   |             |                      |                     |                     |                   |             |                      |  |
| Año de Emisión                      | Pólizas Emiitidas | Edad Prom.  | Siniestros Esperados |                     |                     |                   |             | Total                |  |
|                                     |                   |             | 1er. Año             | 2do. Año            | 3er Año             | 4to Año           | 5to año     |                      |  |
| 1997                                | 5,728             |             | 1,620,861.00         | 1,924,465.69        | 1,969,252.17        | 210,856.06        | 0.00        | 5,725,464.92         |  |
| 1998                                | 9,098             |             | 2,652,881.00         | 3,193,453.72        | 1,182,341.86        | 2.30              | 0.00        | 7,028,678.88         |  |
| 1999                                | 9,199             |             | 2,387,350.00         | 974,992.40          | 2.38                | 0.00              | 0.00        | 3,362,344.79         |  |
| <b>Total</b>                        | <b>24,026</b>     | <b>33.5</b> | <b>6,661,092.00</b>  | <b>6,092,911.81</b> | <b>3,151,596.42</b> | <b>210,888.36</b> | <b>0.00</b> | <b>16,116,488.59</b> |  |
| <b>Siniestros Reales</b>            |                   |             | <b>4,663,741.90</b>  | <b>5,188,561.50</b> | <b>2,311,301.00</b> | <b>42,021.00</b>  | <b>0.00</b> | <b>12,295,625.40</b> |  |
| <b>Utilidad o Pérdida por Mort.</b> |                   |             | <b>1,997,350.10</b>  | <b>904,350.31</b>   | <b>840,295.42</b>   | <b>168,867.36</b> | <b>0.00</b> | <b>3,916,863.19</b>  |  |
| <b>FACTORES DE SELECCIÓN:</b>       |                   |             | <b>70.00%</b>        | <b>85.16%</b>       | <b>73.34%</b>       | <b>19.93%</b>     | <b>0.00</b> | <b>75.73%</b>        |  |

Observamos que en los primeros tres años sucede lo mismo que en el plan anterior, la mortalidad real es más baja que la esperada. En el cuarto año, a diferencia del plan anterior, tenemos un porcentaje bastante bajo de siniestros reales. Este resultado tal vez se deba a que faltaban por reportar siniestros de ese año, pero que ya habían ocurrido, por lo que decidimos no tomarlo en cuenta, en virtud de su baja confiabilidad. Decidimos entonces tomar los porcentajes de los primeros tres años y a partir del cuarto año no modificar la mortalidad, por lo que los factores de selección para el plan T2020B quedaron de la siguiente manera:

| Año                        | 1          | 2          | 3          | 4-20        |
|----------------------------|------------|------------|------------|-------------|
| <b>Factor de Selección</b> | <b>70%</b> | <b>85%</b> | <b>73%</b> | <b>100%</b> |

Finalmente tenemos el comparativo entre la mortalidad esperada y la mortalidad real, para el plan T55S.

| Clave de Plan T55S                   |                  |             |                      |                   |                   |                   |               |                     |
|--------------------------------------|------------------|-------------|----------------------|-------------------|-------------------|-------------------|---------------|---------------------|
| Cifras al 31 de Diciembre de 1999    |                  |             |                      |                   |                   |                   |               |                     |
| Año de Emisión                       | Pólizas Emítidas | Edad Prom.  | Siniestros Esperados |                   |                   |                   |               |                     |
|                                      |                  |             | 1er. Año             | 2do. Año          | 3er. Año          | 4to Año           | 5to año       | Total               |
| 1996                                 | 556              |             | 136,809.92           | 141,250.15        | 118,544.86        | 88,230.67         | 247.17        | 485,082.97          |
| 1997                                 | 2,482            |             | 463,152.47           | 462,371.81        | 307,605.24        | 30,167.31         | 0.00          | 1,263,296.83        |
| 1998                                 | 2,139            |             | 163,634.22           | 144,320.54        | 27,995.12         | 0.00              | 0.00          | 335,949.88          |
| 1999                                 | 2,397            |             | 275,927.69           | 198,491.22        | 0.00              | 0.00              | 0.00          | 474,418.91          |
| <b>Total</b>                         | <b>7,018</b>     | <b>36.8</b> | <b>1,469,524.30</b>  | <b>946,433.72</b> | <b>454,145.22</b> | <b>118,397.98</b> | <b>247.37</b> | <b>3,008,738.59</b> |
| <b>Siniestros Reales</b>             |                  |             | <b>1,308,729.00</b>  | <b>604,072.00</b> | <b>335,561.00</b> | <b>0.00</b>       | <b>0.00</b>   | <b>2,248,362.00</b> |
| <b>Utilidad o Pérdida por Merit.</b> |                  |             | <b>180,795.30</b>    | <b>342,351.72</b> | <b>118,584.22</b> | <b>118,397.98</b> | <b>247.37</b> | <b>760,376.59</b>   |
| <b>FACTORES DE SELECCIÓN:</b>        |                  |             | <b>87.86%</b>        | <b>63.83%</b>     | <b>73.89%</b>     | <b>0.00%</b>      | <b>0.00%</b>  | <b>74.73%</b>       |

Siguiendo la lógica que hemos estado usando para la definición de los porcentajes, podemos definir los factores de selección para el plan T55S de esta manera:

| Año                        | 1          | 2          | 3          | 4-20        |
|----------------------------|------------|------------|------------|-------------|
| <b>Factor de Selección</b> | <b>88%</b> | <b>64%</b> | <b>74%</b> | <b>100%</b> |

No hay que olvidar que las hipótesis deben ser lo más realistas posibles, sin embargo, en el caso de encontrarnos con porcentajes que creemos no reflejan la realidad, es mejor no modificar la tabla de mortalidad previamente determinada.

**Duración y tipo de seguro:**

Los planes que estamos modelando son temporales a cinco y veinte años, por lo que esperamos que la mortalidad se comporte de acuerdo al mercado asegurador.

### Agrupaciones por bloque de seguro:

Las características de los planes que vamos a modelar son similares, por lo que se ha decidido utilizar la misma tabla de mortalidad para las dos agrupaciones de seguro:

Temporales de plazo igual a veinte años.

Temporales de plazo igual a cinco años.

### Mortalidad en seguros renovables:

Para los planes que se van a modelar la mortalidad de renovación es igual a la normal ya que estos planes se contratan o compran una sola vez, no son renovables, a menos que al vencimiento del plazo de seguro, el asegurado desee nuevamente un plan de descuento por nómina.

### Mortalidad en conversiones:

En estos planes de descuento por nómina que estamos modelando, no existen cambios de plan, si el asegurado desea un cambio de plan, se le emite una póliza nueva que deberá llevar su selección correspondiente y la mortalidad se ajustará a su edad de contratación.

## 3.3 Caducidad y persistencia.

Para determinar los mejores supuestos de caducidad, es preciso realizar un estudio sobre la caducidad de los productos a modelar; en este caso es factible usar la historia de la compañía para predecir cómo sucederá el evento en el futuro, ya que el volumen de la cartera es suficiente para darnos una idea de la caducidad esperada.

A continuación presentaremos la teoría bajo la cual se hizo el estudio de caducidad de la cartera modelada.

### Tasas de caducidad

Las tasas de caducidad pueden ser expresadas como:

$$\text{Tasas de caducidad} = \frac{\text{Cancelaciones durante el período}}{\text{Vigor al inicio del período}}$$

Las tasas de caducidad son expresadas para primer año, segundo año, tercer año y así sucesivamente. La tasa de caducidad de primer año es normalmente la más alta y decrece posteriormente. Las tasas de caducidad después de ciertos años (normalmente 5), permanecen constantes.

### Cancelaciones:

Las cancelaciones pueden ser expresadas en términos de primas anuales sumas aseguradas o pólizas.

Las cancelaciones son pólizas terminadas a petición del asegurado, incluyendo pólizas sin valor de rescate o retiro.

Las cancelaciones excluyen siniestros, cancelaciones iniciales de la compañía, préstamo automático de primas, expiraciones, vencimientos, conversiones, rehabilitaciones, pólizas emitidas pero no tomadas y pólizas a prima única.

### Vigor:

El vigor puede ser expresado en términos de primas anuales, sumas aseguradas o pólizas.

El vigor excluye pólizas que son prorrogadas o saldadas y pólizas con pago limitado de prima que estén completamente pagadas.

### Base de datos:

El estudio puede ser realizado por año de emisión, donde se sigue la historia de las pólizas del año calendario  $t$  al año calendario  $t+1$  más el período de gracia y así sucesivamente. El estudio de caducidad para ordinarios de vida, primas únicas y seguros temporales, se recomienda sea hecho por separado. El estudio puede ser realizado por líneas de producto, grupos de edades y tipos de suscripción.

El estudio de caducidad fue realizado para los planes identificados previamente como modelados, tomando solamente cancelación de pólizas por año de emisión, los resultados se presentan en los siguientes cuadros:

**Caducidad y persistencia por póliza:**

**Estudio de caducidad del plan T2020P:**

| Clave de plan T2020P |           |      |      |      |              |      |      |      |
|----------------------|-----------|------|------|------|--------------|------|------|------|
| Año de Emisión       | Caducidad |      |      |      | Persistencia |      |      |      |
|                      | Año1      | Año2 | Año3 | Año4 | Año1         | Año2 | Año3 | Año4 |
| 1996                 | 11%       | 13%  | 29%  | 5%   | 89%          | 87%  | 71%  | 95%  |
| 1997                 | 16%       | 27%  | 2%   |      | 84%          | 73%  | 98%  |      |
| 1998                 | 25%       | 5%   |      |      | 75%          | 95%  |      |      |
| 1999                 | 22%       |      |      |      | 78%          |      |      |      |
| Promedio             | 19%       | 15%  | 16%  | 5%   | 81%          | 85%  | 84%  | 95%  |

De acuerdo al promedio de cancelación de este plan, las tasas de caducidad que debemos usar para la cartera del plan T2020P son:

| Año 1 | Año 2 | Año 3 | Año 4 - |
|-------|-------|-------|---------|
| 20%   | 15%   | 15%   | 5%      |

**Estudio de caducidad del plan T2020B:**

| Clave de plan T2020B |           |      |      |      |              |      |      |      |
|----------------------|-----------|------|------|------|--------------|------|------|------|
| Año de Emisión       | Caducidad |      |      |      | Persistencia |      |      |      |
|                      | Año1      | Año2 | Año3 | Año4 | Año1         | Año2 | Año3 | Año4 |
| 1997                 | 17%       | 14%  | 2%   |      | 83%          | 86%  | 98%  |      |
| 1998                 | 15%       | 6%   |      |      | 85%          | 94%  |      |      |
| 1999                 | 10%       |      |      |      | 90%          |      |      |      |
| Promedio             | 14%       | 10%  | 2%   |      | 86%          | 90%  | 98%  |      |

De acuerdo al promedio de caducidad para este plan, las tasas de caducidad que debemos usar para el plan T2020B son:

| Año 1 | Año 2 | Año 3 | Año 4 - |
|-------|-------|-------|---------|
| 15%   | 10%   | 2%    | 2%      |

### Estudio de caducidad del plan T55S:

| Clave de plan T55S |           |      |      |      |              |      |      |      |
|--------------------|-----------|------|------|------|--------------|------|------|------|
| Año de Emisión     | Caducidad |      |      |      | Persistencia |      |      |      |
|                    | Año1      | Año2 | Año3 | Año4 | Año1         | Año2 | Año3 | Año4 |
| 1996               | 28%       | 20%  | 17%  | 5%   | 72%          | 80%  | 83%  | 95%  |
| 1997               | 21%       | 5%   | 1%   |      | 79%          | 95%  | 99%  |      |
| 1998               | 30%       | 2%   |      |      | 70%          | 98%  |      |      |
| 1999               | 11%       |      |      |      | 89%          |      |      |      |
| Promedio           | 23%       | 9%   | 9%   | 5%   | 77%          | 91%  | 91%  | 95%  |

De acuerdo al promedio de caducidad para este plan, las tasas de caducidad que debemos usar para el plan T55S son:

| Año 1 | Año 2 | Año 3 | Año 4 - |
|-------|-------|-------|---------|
| 25%   | 10%   | 10%   | 5%      |

Los reportes (únicamente del T2020B y T55S) tal y como los genera el sistema se pueden encontrar en el anexo 3.

### 3.4 Gastos.

Necesitamos hacer un análisis de los gastos de la compañía con la que estamos trabajando para saber qué gastos usaremos para la proyección de reservas DAC, es decir, los gastos que determinemos según los estados financieros de la compañía, servirán para el cálculo de la reserva de los Costos de Adquisición Diferibles.

Los gastos pueden ser diferibles o no diferibles. Los gastos diferibles son aquellos que están directamente ligados con la venta del producto y que iremos amortizando en el tiempo. Los gastos no diferibles son aquellos que no están directamente involucrados en la venta de las pólizas de seguro.

La compañía con la que estamos trabajando, tiene la característica de ser una compañía pequeña, razón por la cual, no tiene desglosados los gastos que están directamente ligados a la venta del seguro, y los que no están relacionados directamente con ella. Este desglose nos permitiría saber qué gastos son diferibles y cuáles no.

De esta manera se planeó hacer un estudio de tiempos, el cual se realizó por área de la compañía para determinar, dependiendo del tiempo dedicado a cada actividad (relacionada o no con la venta), qué porcentaje se dedicaba a cada actividad y tipo de seguro, en particular a los productos de descuento por nómina que son los planes que estamos modelando para GAAP. El formato con el que se trabajó se encuentra en el anexo 4, cabe mencionar que el formato fue llenado por todas las áreas de la compañía, entre ellas Emisión, Cobranzas, Selección, Actuaría, Sistemas, Contabilidad, etc.

Las actividades están divididas en cuatro grandes bloques.

- Gastos de Adquisición ( Actividades totalmente enfocadas a la venta del Producto en el primer año )
- Gastos de Administración ( Actividades totalmente enfocadas a la venta de la renovación del producto )
- Gastos de Administración General ( Actividades de la compañía que no tienen que ver directamente con la venta del producto )
- Otros Gastos ( Cualquier otra actividad de la compañía que no tiene que ver directamente con la venta del producto )

Una vez determinados los porcentajes de tiempo dedicados a las actividades anteriores, dividimos los gastos de la compañía en seis grandes bloques para ser distribuidos de acuerdo a estos porcentajes:

- Gastos de salarios y rentas
- Gastos de sistemas y programación
- Gastos de correo y teléfono
- Gastos de impresión y papelería
- Gastos de viaje
- Gastos asignados directamente al área de la compañía según la descripción del gasto del estado financiero de la compañía.

Finalmente después de hacer el prorrateo de gastos, se definió en qué porcentaje era diferible ese gasto. Los criterios que se tomaron para la definición de estos porcentajes fueron las características de la infraestructura de ventas de la compañía y la experiencia de actuarios consultores expertos en la materia. En el anexo 4 se pueden ver que actividades se determinaron como diferibles y en qué porcentajes.

De esta forma los gastos que se definieron para la valuación de la reserva de los gastos de adquisición diferibles fueron los siguientes:

|  |           |
|--|-----------|
| Gasto total por póliza:                    | \$ 531.00 |
| Gasto de Adquisición Diferible por póliza: | \$ 148.00 |
| Gasto total por póliza No Diferible:       | \$ 383.00 |

Es preciso mencionar que generalmente no se difiere más de lo que se tiene cargado en la tarifa, por lo que se revisó que los gastos diferibles no fueran mayores a lo tarifado.

Para ver a detalle el estudio completo de gastos, ver la hoja de cálculo en el CD anexo: "Estudio de Gastos.XLS" y "Porcentajes de Gastos.XLS".

### 3.5 Supuestos PAD.

Los factores de provisión para posibles desviaciones adversas al riesgo, son ajustes a las hipótesis realistas pero con un margen de desviación adversa, aplicados a los mejores supuestos que se hayan determinado, ya que no sabemos con seguridad cómo se comportarán nuestros supuestos en el futuro.

Tasas de inversión:

No podemos pronosticar tasas de inversión altas en el futuro, por lo que es razonable reducir al 95% las tasas de inversión, de manera que las tasas de inversión quedaron de la siguiente manera:

*Tasa de inversión de reservas = Mejor estimación de la tasa \* 0.95*

Mortalidad:

Una vez definidos la Tabla de Mortalidad y los factores de selección, de acuerdo a la sección 3.2, no sabemos con certeza si reflejarán nuestra propia experiencia en el futuro, por lo que definimos un margen de mortalidad adverso del 5%, quedando los factores de la siguiente manera:

*Tasa de mortalidad para reservas = Mejor estimación de la tasa \* 1.05*



**Caducidad y persistencia:**

Como la caducidad refleja la propia experiencia de la compañía y se toma la cartera en vigor al momento de valuación (dicho vigor refleja la caducidad en ese momento), consideramos que las tasas quedarán de la siguiente manera:

*Tasa de caducidad para reservas = Mejor estimación de la tasa*

**Gastos:**

Para el caso de gastos sucede lo mismo que para la caducidad, refleja la experiencia propia de la compañía al momento de valuación, por lo que no se considera ningún ajuste de desviación adverso al riesgo.

*Gastos antes de inflación para reservas = Mejor estimación de gastos*

## CAPÍTULO 4

### Valuación de la Reserva GAAP

Una vez que determinamos los supuestos de mortalidad, caducidad, tasas de interés y gastos, procederemos a calcular los factores de reserva GAAP por edad y año de vigencia. Estos factores posteriormente serán aplicados al vigor de la cartera modelada, obteniendo así la valuación de reservas GAAP de la compañía. Posteriormente analizaremos e interpretaremos los resultados de la valuación.

Es preciso mencionar que tanto para el cálculo de los factores de primas y reservas, como para la valuación de la reserva GAAP, nos apoyaremos en un paquete para modelaje actuarial denominado PTS (Pricing Testing System), el cual nos proporcionará el estado de resultados estatutario y el correspondiente a GAAP, así como el flujo de efectivo y la información financiero-estadística de la compañía por año calendario.

Es importante verificar que el cálculo de reservas sea correcto, por lo que los factores de primas y reservas, serán calculados en una hoja de cálculo y comparados contra los obtenidos por PTS, se anexarán en un CD todos los archivos generados para que el lector tenga una referencia mayor sobre los cálculos realizados.

#### 4.1 Ajustes a la cartera en vigor.

Para el cálculo de los factores de primas y reservas, tanto de beneficios como de gastos, se supondrá lo siguiente:

- Los siniestros ocurren a la mitad del año
- Los rescates ocurren al final del año
- Los gastos se incurren al principio del año
- Las primas son pagadas anualmente al inicio del período.
- Las pólizas son emitidas a la mitad del año.
- No se considera reaseguro para efectos de este trabajo.

Para la valuación de la reserva se agrupó el vigor de la cartera por rangos de suma asegurada y rangos de edad para cada año de emisión, ya que para realizar estas proyecciones en PTS es posible entrar todo el vigor de la cartera pero tardaríamos demasiado tiempo; por lo que se tuvo que realizar este ajuste a la cartera en vigor. Los rangos que se utilizaron para los promedios de suma asegurada y edad son los siguientes:

| Rangos de Edad |                   | Rangos de Suma Asegurada |                   |
|----------------|-------------------|--------------------------|-------------------|
| De             | Intervalo de edad | De                       | Intervalo de S.A. |
| 15-20          | 18                | 0 - 99,999               | 50,000            |
| 21-25          | 23                | 100,000 - 199,999        | 150,000           |
| 26-30          | 28                | 200,000 - 299,999        | 250,000           |
| 31-35          | 33                | 300,000 - 399,999        | 350,000           |
| 36-40          | 38                | 400,000 - 499,999        | 450,000           |
| 41-45          | 43                | 500,000 - 599,999        | 550,000           |
| 46-50          | 48                | 600,000 -                | 650,000           |
| 51-55          | 53                |                          |                   |
| 56-60          | 58                |                          |                   |
| 61-65          | 63                |                          |                   |
| 66-70          | 68                |                          |                   |
| 71-75          | 73                |                          |                   |

Consideramos que estos eran los rangos que deberíamos utilizar para reducir la cartera tanto por edad como por suma asegurada. Las edades se tomaron a intervalos de edades de cinco en cinco y la suma asegurada en intervalos de cien mil. Cabe mencionar que para cada intervalo se calculó su promedio de edad y su promedio de suma asegurada respectivamente.

La simplificación de este vigor se realizó únicamente para las pólizas de los planes modelados. Este proceso se realizó con la ayuda de una tabla dinámica en una hoja de cálculo, para cada plan modelado. El lector podrá ver este proceso en los siguientes archivos anexos en el CD:

- T2020P.XLS
- T2020B.XLS
- T55S.XLS

## 4.2 Cálculo de factores de la reserva de beneficios.

Para el cálculo de los factores de beneficios, empezaremos identificando las variables que necesitamos y después nos enfocaremos a las fórmulas que determinan los factores de reserva, posteriormente tomaremos una póliza y le calcularemos sus factores en una hoja de cálculo para compararlos contra los reportados por PTS. Las fórmulas serán aplicables a todos los planes que se están modelando.

### 4.2.1 Nomenclatura.

*Sean:*

|               |   |   |
|---------------|---|---|
| $x$           | = | Edad de emisión   |
| $n$           | = | Período de seguro y plazo de pago   |
| $s$ y $t$     | = | Año póliza  |
| $v$           | = | $\frac{1}{1+i}$   |
| $i$           | = | Tasa de interés   |
| $v_t^s$       | = | Representa el valor presente financiero de una unidad durante $s$ años, considerando las tasas de interés de los años $t+1$ a $t+s$ .<br>$(v_{t+1})(v_{t+2})(v_{t+3}) \dots (v_{t+s-1})(v_{t+s})$ |
| ${}_{s-1}P_x$ | = | Representa la probabilidad de que una póliza emitida a edad $x$ permanezca en vigor al principio del año póliza $s$ , donde ${}_0P_x = 1$   |
| $q_{x+t-1}^M$ | = | Tasa de mortalidad en el año póliza $t$ , para una persona de edad $x$  |
| $q_{x+t-1}^C$ | = | Tasa de caducidad en el año póliza $t$ , para una persona de edad $x$   |
| ${}_tSIN_x$   | = | Siniestros de edad $x$ en el año $t$  |
| ${}_tRES_x$   | = | Rescates de edad $x$ en el año $t$  |
| ${}_tPNBF_x$  | = | Prima Neta de Beneficios Futuros de edad $x$ en el año $t$  |
| ${}_tPB_x$    | = | Prima Bruta de edad $x$ en el año $t$   |
| ${}_tRTBF_x$  | = | Factor de Reserva Terminal de Beneficios Futuros de edad $x$ en el año $t$  |

#### 4.2.2 Factores de prima neta.

Los factores de la prima neta de beneficios se determinan de la siguiente forma:

$${}_tPNBF_x = \frac{\sum_{s=1}^n {}_{s-1}P_x * [SIN_x * q_{x+s-1}^M * v_0^{s-0.5} + {}_tRES_x * q_{x+s-1}^C * (1 - q_{x+s-1}^M) * v_0^s]}{\sum_{s=1}^n {}_{s-1}P_x * \left[ \frac{{}_sPB_x}{{}_1PB_x} \right] * v_0^{s-1}}$$

#### 4.2.3 Factores de reserva.

Los factores de la reserva terminal de beneficios se obtienen al hacer la diferencia entre el valor presente de beneficios futuros y el valor presente de la prima neta de beneficios futuros:

$${}_{t-1}RTBF_x = \left[ \sum_{s=1}^n {}_{t-1}P_{x+s} * \left\{ {}_{s+1}SIN_x * q_{x+s+1}^M * v_t^{t-0.5} + {}_{s+1}RES_x * q_{x+s+1}^C * (1 - q_{x+s+1}^M) * v_t^s \right\} \right] - \left[ \sum_{s=1}^n {}_{t-1}P_{x+s} * v_t^{s-1} * {}_{s+1}PNBF_x \right]$$

adicionalmente tenemos que:

$${}_{t-1}P_{x+t} = {}_{t-2}P_{x+t} * [1 - q_{x+t+2}^M] * [1 - q_{x+t+2}^C]$$

Podemos entonces expresar un planteamiento recursivo de la misma; recordemos que una fórmula recursiva es esencialmente una que determina la reserva de la póliza al final de un año dado, en términos de la reserva al final del año anterior, las primas de valuación recibidas y los costos incurridos durante el año. De esta manera, la fórmula de los factores de la reserva de beneficios quedaría como sigue:

$${}_{t-1}RTBF_x = \frac{[{}_{t-1}RTBF_x + {}_{s+1}PNBF_x] * (1 + i_t) - [{}_{s+1}SIN_x * q_{x+s+1}^M * (1 + i_t)^{0.5} - {}_{s+1}RES_x * q_{x+s+1}^C * (1 - q_{x+s+1}^M)]}{[1 - q_{x+s+1}^M] * [1 - q_{x+s+1}^C]}$$

Estas fórmulas recursivas pueden ser justificadas lógicamente viendo a las reservas como acumulaciones retrospectivas de primas de valuación e ingresos por inversión, reducidas por los beneficios y gastos incurridos. La división por la probabilidad de supervivencia al final del año es lógica dado que los factores de reserva al final de cualquier año póliza están sobre una base de "por unidad en vigor" al final de cada año póliza, y los factores de reserva en los momentos  $t$  y  $t-1$  serán aplicados a diferentes inventarios de vigor.<sup>13</sup>

#### 4.2.4 Comparativos del cálculo de los factores.

Se utilizó una hoja de cálculo para obtener los factores de reserva y prima, la cual se recomienda revisar para la mejor comprensión del cálculo. Cabe mencionar que para cada plan modelado, se crearon sus tablas correspondientes de factores por edad y año, utilizando las hipótesis descritas en el capítulo tres.

Para comprobar que estuvieran bien calculados estos factores, se hizo una corrida en PTS y se cuadraron los factores obtenidos con los calculados en la hoja de cálculo. Para esto tomamos una póliza con las siguientes características:

<sup>13</sup> Tesis: "Propuesta para el cálculo de Reservas GAAP", Facultad de Ciencias U.N.A.M., página 16

| Datos de la Póliza  |                    |
|---|--------------------|
| Plan:   | T2020P             |
| Edad:   | 15                 |
| Suma asegurada:   | 250,000            |
| Fecha de emisión:   | Julio 1, 1999      |
| Fecha de valuación:   | Diciembre 31, 1999 |
| Forma de pago:  | Anual              |
| * Se tomaron los supuestos GAAP determinados en el capítulo tres. |                    |
| * Se tomaron los supuestos SAP expuestos en el capítulo dos.      |                    |
| * Se proyectan veinte años los factores de reserva.               |                    |

De acuerdo a lo anterior se obtuvieron los siguientes comparativos:

| VP Pma. de Beneficios | PTS    | Hoja de Cálculo | Diferencia | %      |
|-----------------------|--------|-----------------|------------|--------|
| Factor                | 39.35% | 39.45%          | -0.10      | -0.25% |

| Factor de Rva. de Beneficios | PTS  | Hoja de Cálculo | Diferencia | %      |
|------------------------------|------|-----------------|------------|--------|
| Año 1                        | 0.45 | 0.45            | 0.00       | 0.00%  |
| Año 2                        | 0.87 | 0.87            | 0.00       | 0.00%  |
| Año 3                        | 1.23 | 1.23            | 0.00       | 0.00%  |
| Año 4                        | 1.43 | 1.43            | 0.00       | 0.00%  |
| Año 5                        | 1.62 | 1.62            | 0.00       | 0.00%  |
| Año 6                        | 1.81 | 1.81            | 0.00       | 0.00%  |
| Año 7                        | 1.99 | 1.99            | 0.00       | 0.00%  |
| Año 8                        | 2.14 | 2.15            | -0.01      | -0.47% |
| Año 9                        | 2.27 | 2.28            | -0.01      | -0.44% |
| Año 10                       | 2.36 | 2.37            | -0.01      | -0.42% |
| Año 11                       | 2.42 | 2.43            | -0.01      | -0.41% |
| Año 12                       | 2.46 | 2.46            | 0.00       | 0.00%  |
| Año 13                       | 2.45 | 2.45            | 0.00       | 0.00%  |
| Año 14                       | 2.39 | 2.40            | -0.01      | -0.42% |
| Año 15                       | 2.29 | 2.30            | -0.01      | -0.44% |
| Año 16                       | 2.12 | 2.13            | -0.01      | -0.47% |
| Año 17                       | 1.88 | 1.89            | -0.01      | -0.53% |
| Año 18                       | 1.55 | 1.56            | -0.01      | -0.65% |
| Año 19                       | 0.87 | 0.87            | 0.00       | 0.00%  |
| Año 20                       | 0.00 | 0.00            | 0.00       | 0.00%  |

Las diferencias son pequeñas, por lo que podemos decir que los factores de beneficios están bien calculados. Ver hoja de cálculo T2020P\_gaap.XLS.

#### 4.3 Cálculo de factores de la reserva de gastos diferibles.

Para el cálculo de los factores de gastos, definiremos las variables que necesitamos para el cálculo y después nos enfocaremos a las fórmulas que determinan los factores de reserva. Estas fórmulas serán aplicables a todos los planes que se están modelando.

**4.3.1 Nomenclatura.**

Sean:

|               |   |   |
|---------------|---|---|
| $x$           | = | Edad de emisión   |
| $n$           | = | Período de amortización ( 20 y 5 dependiendo del plan )   |
| $s$ y $t$     | = | Año póliza  |
| $v$           | = | $\frac{1}{1+i}$   |
| $i$           | = | Tasa de interés   |
| $v_t^s$       | = | Representa el valor presente financiero de una unidad durante $s$ años, considerando las tasas de interés de los años $t+1$ a $t+s$ .<br>$(v_{t,t+1})(v_{t,t+2})(v_{t,t+3})\dots(v_{t,t+s-1})(v_{t,t+s})$ |
| ${}_{t-1}P_x$ | = | Representa la probabilidad de que una póliza emitida a edad $x$ permanezca en vigor al principio del año póliza $s$ , donde ${}_0P_x = 1$   |
| $q_{x+t-1}^M$ | = | Tasa de mortalidad en el año póliza $t$ , para una persona de edad $x$  |
| $q_{x+t-1}^C$ | = | Tasa de caducidad en el año póliza $t$ , para una persona de edad $x$   |
| ${}_tGD$      | = | Gastos Diferibles en el año póliza $t$  |
| ${}_tPNGD_x$  | = | Prima Neta de Gastos Diferibles de edad $x$ en el año $t$   |
| ${}_tPB_x$    | = | Prima Bruta de edad $x$ en el año $t$   |
| ${}_tRTGD_x$  | = | Factor de Reserva Terminal de Gastos Diferibles de edad $x$ en el año $t$   |

**4.3.2 Factores de prima neta.**

Los factores de la prima neta de gastos diferibles son obtenidos de acuerdo a la siguiente fórmula:

$${}_tPNGD_x = \frac{\sum_{s=1}^n {}_{t-1}P_x * [GD]^s * v_0^{s-1}}{\sum_{s=1}^n {}_{t-1}P_x * \left[ \frac{{}_sPB_x}{{}_1PB_x} \right]^s * v_0^{s-1}}$$

**4.3.3 Factores de reserva.**

Los factores de la reserva de gastos diferibles son obtenidos de la diferencia entre el valor presente de los gastos y el valor presente de la prima neta de gastos.

$$,RTGD_x = \left[ \sum_{j=1}^{\infty} {}_{j-1}P_{x+j} * {}_{j+j}GD * v_j^{t-1} \right] - \left[ \sum_{j=1}^{\infty} {}_{j-1}P_{x+j} * v_j^{t-1} * {}_jPNGD_x \right]$$

adicional a esto, se tiene que:

$${}_{j-1}P_{x+j} = {}_{j-2}P_{x+j} * [1 - q_{x+j-2}^M] * [1 - q_{x+j-2}^C]$$

por lo que, (utilizando la misma lógica que usamos para la derivación de las fórmulas recursivas de la reserva de beneficios) podemos expresar los factores de la reserva de gastos de acuerdo a una fórmula recursiva como sigue:

$$,RTGD_x = \frac{[{}_{j-1}RTGD_x + PNGD_x] * (1 + i_j) - [GD] * (1 + i_j)}{[1 - q_{x+j-1}^M] * [1 - q_{x+j-1}^C]}$$

El mismo razonamiento definido en la sección 4.2.3 de este capítulo, es aplicado para la explicación de estas fórmulas recursivas.

#### 4.3.4 Comparativos del cálculo de los factores.

Se utilizó una hoja de cálculo para obtener los factores de reserva y prima de gastos. Para cada plan modelado se crearon sus tablas correspondientes de factores por edad y año, utilizando las hipótesis descritas en el capítulo tres.

Para comprobar que estuvieran bien calculados los factores de prima y reserva de gastos, se hizo una corrida en PTS y se cuadraron los factores con los obtenidos en la hoja de cálculo. Para esto tomamos una póliza con las mismas características utilizadas para calcular los factores de la reserva de beneficios:

| Datos de la Póliza  |                    |
|---|--------------------|
| Plan:   | T2020P             |
| Edad:   | 15                 |
| Suma asegurada:   | 250,000            |
| Fecha de emisión:   | Julio 1, 1999      |
| Fecha de valuación:   | Diciembre 31, 1999 |
| Forma de pago:  | Annual             |
| * Se tomaron los supuestos GAAP determinados en el capítulo tres. |                    |
| * Se tomaron los supuestos SAP expuestos en el capítulo dos.      |                    |
| * Se proyectan veinte años los factores de reserva.               |                    |

Obteniendo los siguientes comparativos:



| VP de Pmas. | PTS    | Hoja de Cálculo | Diferencia | %     |
|-------------|--------|-----------------|------------|-------|
| Gastos Dif. | 31.50% | 31.48%          | 0.02       | 0.06% |

| Factor de Rva. de Gtos. Dif. | PTS  | Hoja de Cálculo | Diferencia | %      |
|------------------------------|------|-----------------|------------|--------|
| Año 1                        | 1.73 | 1.73            | 0.00       | 0.00%  |
| Año 2                        | 2.19 | 2.19            | 0.00       | 0.00%  |
| Año 3                        | 2.64 | 2.64            | 0.00       | 0.00%  |
| Año 4                        | 2.81 | 2.82            | -0.01      | -0.36% |
| Año 5                        | 2.97 | 2.97            | 0.00       | 0.00%  |
| Año 6                        | 2.98 | 2.98            | 0.00       | 0.00%  |
| Año 7                        | 2.97 | 2.97            | 0.00       | 0.00%  |
| Año 8                        | 2.93 | 2.93            | 0.00       | 0.00%  |
| Año 9                        | 2.86 | 2.86            | 0.00       | 0.00%  |
| Año 10                       | 2.75 | 2.76            | -0.01      | -0.36% |
| Año 11                       | 2.62 | 2.62            | 0.00       | 0.00%  |
| Año 12                       | 2.46 | 2.47            | -0.01      | -0.41% |
| Año 13                       | 2.29 | 2.29            | 0.00       | 0.00%  |
| Año 14                       | 2.08 | 2.09            | -0.01      | -0.48% |
| Año 15                       | 1.85 | 1.85            | 0.00       | 0.00%  |
| Año 16                       | 1.58 | 1.58            | 0.00       | 0.00%  |
| Año 17                       | 1.26 | 1.26            | 0.00       | 0.00%  |
| Año 18                       | 0.90 | 0.90            | 0.00       | 0.00%  |
| Año 19                       | 0.48 | 0.48            | 0.00       | 0.00%  |
| Año 20                       | 0.00 | 0.00            | 0.00       | 0.00%  |

Las diferencias son pequeñas, por lo que podemos decir que los factores de gastos están bien calculados. Ver hoja de cálculo anexa T2020P\_gaap.XLS.

#### 4.4 Fórmulas para la valuación de la reserva media interpolada.

Una vez calculados los factores de prima y reserva, procederemos a realizar la valuación de reservas GAAP. Las fórmulas para la valuación de la reserva GAAP, asumen el método de valuación a reserva media interpolada, es decir, se calculará interpolando la reserva inicial y terminal, basado en el número de meses al próximo aniversario. La valuación se realizará tomando los factores por edad y año, aplicados al vigor de los planes modelados.

##### 4.4.1 Nomenclatura.

Sean:

|               |   |   |
|---------------|---|---|
| x             | = | Edad de emisión   |
| t             | = | Año póliza  |
| M             | = | Número de meses de la fecha de valuación a la fecha del próximo aniversario             |
| k             | = | Número de primas a pagar entre la fecha de valuación y la fecha del próximo aniversario |
| ${}_xRMIB_x$  | = | Reserva Media Interpolada de Beneficios de edad x al año póliza t                       |
| ${}_xRMIGD_x$ | = | Rva. Media Interpolada de Gastos Diferibles de edad x al año póliza t                   |

#### 4.4.2 Reserva de beneficios.

$$,RMIB_x = \frac{M}{12} \times (,_{-1}RTBF_x + ,PNBF_x) + \frac{12-M}{12} \times ,RTBF_x$$

$$\text{Prima Neta Diferida} = \frac{k}{12} \times ,PNBF_x$$

#### 4.4.3 Reserva de gastos diferibles.

$$,RMIGD_x = \frac{M}{12} \times (,_{-1}RTGD_x + ,PNGD_x) + \frac{12-M}{12} \times ,RTGD_x$$

$$\text{Prima Neta Diferida} = \frac{k}{12} \times ,PNGD_x$$

#### 4.4.4 Comparativos del cálculo de la reserva.

Para asegurarnos que el cálculo de la reserva media interpolada es correcto, tomaremos una póliza y cuadraremos el resultado de PTS contra la hoja de cálculo utilizada. Para esto tomaremos los datos de la póliza con la que hemos estado trabajando.

| Datos de la Póliza |  |
|--------------------|--|
| Plan:              | T2020P   |
| Edad:              | 15   |
| Suma asegurada:    | 250,000  |
| Fecha de emisión   | Enero 1, 1999  |
| Fecha de valuación | Diciembre 31, 1999   |
| Forma de pago:     | Anual  |
| M=0                | Ya que el número de meses de la fecha de valuación al próximo aniversario es cero.   |
| k=0                | También es cero ya que el 31 de diciembre ya no existen primas pendientes por pagar. |
|                    | * Se tomaron los supuestos GAAP determinados en el capítulo tres.                    |
|                    | * Se tomaron los supuestos SAP expuestos en el capítulo dos.                         |
|                    | * Se proyectan veinte años los factores de reserva.                                  |

Hemos tomado como mes de inicio de vigencia enero, para poder simplificar los cálculos y sea más cómodo verificar las reservas. Sin embargo en la valuación normal tomaremos como mes de inicio de vigencia el mes de julio, es decir, supondremos que en promedio todas las pólizas son emitidas a la mitad del año.

Para cuadrar las reservas GAAP calculadas en la hoja de cálculo, contra las calculadas por PTS, no consideramos los efectos de la mortalidad y la caducidad, para que resultara más directa y sencilla la revisión de los resultados, es decir, se considera un grupo cerrado. Esta consideración es sólo para este ejemplo, ya que para la proyección completa del vigor, la mortalidad y caducidad son imprescindibles. De esta forma se obtienen los siguientes comparativos:

| VALUACIÓN DE RESERVAS GAAP (Reserva de Beneficios) |      |               |         |               |                |             |        |
|--|------|---------------|---------|---------------|----------------|-------------|--------|
| Año  | Edad | Factores GAAP |         | Reservas GAAP |                | Diferencias |        |
|  |      | Pma.          | Rva.    | PTS           | Hoja de Cál.c. | Neta        | %      |
| 1  | 15   | 2.5963        | 0.45312 | 113           | 113            | 0           | 0.00%  |
| 2  | 16   | 2.3605        | 0.87296 | 218           | 218            | 0           | 0.00%  |
| 3  | 17   | 2.2067        | 1.22887 | 306           | 307            | -1          | -0.33% |
| 4  | 18   | 2.0944        | 1.42844 | 356           | 357            | -1          | -0.28% |
| 5  | 19   | 2.0189        | 1.62069 | 404           | 405            | -1          | -0.25% |
| 6  | 20   | 1.9360        | 1.81281 | 452           | 453            | -1          | -0.22% |
| 7  | 21   | 1.8448        | 1.99001 | 497           | 498            | -1          | -0.20% |
| 8  | 22   | 1.7444        | 2.14687 | 536           | 537            | -1          | -0.19% |
| 9  | 23   | 1.6344        | 2.27774 | 569           | 569            | 0           | 0.00%  |
| 10   | 24   | 1.5144        | 2.36517 | 590           | 591            | -1          | -0.17% |
| 11   | 25   | 1.3845        | 2.42635 | 605           | 607            | -2          | -0.33% |
| 12   | 26   | 1.2505        | 2.46000 | 614           | 615            | -1          | -0.16% |
| 13   | 27   | 1.1173        | 2.45226 | 612           | 613            | -1          | -0.16% |
| 14   | 28   | 0.9842        | 2.39909 | 598           | 600            | -2          | -0.33% |
| 15   | 29   | 0.8506        | 2.29632 | 573           | 574            | -1          | -0.17% |
| 16   | 30   | 0.7159        | 2.12789 | 531           | 532            | -1          | -0.19% |
| 17   | 31   | 0.5794        | 1.88732 | 471           | 472            | -1          | -0.21% |
| 18   | 32   | 0.4403        | 1.55611 | 388           | 389            | -1          | -0.26% |
| 19   | 33   | 0.2979        | 0.87030 | 217           | 218            | -1          | -0.46% |
| 20   | 34   | 0.1514        | 0.00000 | 0             | 0              | 0           | 0.00%  |

| VALUACIÓN DE RESERVAS DAC    |      |              |         |              |                |             |        |
|------------------------------|------|--------------|---------|--------------|----------------|-------------|--------|
| Reserva de Gastos Diferibles |      |              |         |              |                |             |        |
| Año                          | Edad | Factores DAC |         | Reservas DAC |                | Diferencias |        |
|                              |      | Pma.         | Rva.    | PTS          | Hoja de Cál.c. | Neta        | %      |
| 1                            | 15   | 2.0720       | 1.72963 | 432          | 432            | 0           | 0.00%  |
| 2                            | 16   | 1.8839       | 2.19239 | 547          | 548            | -1          | -0.18% |
| 3                            | 17   | 1.7611       | 2.64185 | 660          | 660            | 0           | 0.00%  |
| 4                            | 18   | 1.6715       | 2.81772 | 704          | 704            | 0           | 0.00%  |
| 5                            | 19   | 1.6112       | 2.97011 | 742          | 743            | -1          | -0.13% |
| 6                            | 20   | 1.5451       | 2.98123 | 744          | 745            | -1          | -0.13% |
| 7                            | 21   | 1.4723       | 2.96961 | 741          | 742            | -1          | -0.13% |
| 8                            | 22   | 1.3922       | 2.93097 | 732          | 733            | -1          | -0.14% |
| 9                            | 23   | 1.3044       | 2.86099 | 714          | 715            | -1          | -0.14% |
| 10                           | 24   | 1.2086       | 2.75550 | 688          | 689            | -1          | -0.15% |
| 11                           | 25   | 1.1050       | 2.62197 | 655          | 655            | 0           | 0.00%  |
| 12                           | 26   | 0.9980       | 2.46800 | 616          | 617            | -1          | -0.16% |
| 13                           | 27   | 0.8917       | 2.29048 | 572          | 573            | -1          | -0.17% |
| 14                           | 28   | 0.7855       | 2.08576 | 521          | 521            | 0           | 0.00%  |
| 15                           | 29   | 0.6789       | 1.84966 | 462          | 462            | 0           | 0.00%  |
| 16                           | 30   | 0.5713       | 1.57733 | 394          | 394            | 0           | 0.00%  |
| 17                           | 31   | 0.4624       | 1.26317 | 315          | 316            | -1          | -0.32% |
| 18                           | 32   | 0.3514       | 0.90073 | 225          | 225            | 0           | 0.00%  |
| 19                           | 33   | 0.2378       | 0.48262 | 120          | 121            | -1          | -0.83% |
| 20                           | 34   | 0.1209       | 0.00000 | 0            | 0              | 0           | 0.00%  |

Es preciso mencionar que no existe Prima Neta Diferida debido a que, para este ejemplo, no hay ningún pago pendiente de prima, se considero mes de emisión igual a uno. Por otra parte, como el número de meses que faltan de la fecha de valuación al próximo aniversario es cero, prácticamente la reserva es la reserva terminal al final del año, por lo que, de la fórmula de la reserva media interpolada sólo se aplica la segunda parte. Ver hoja de cálculo Chkrvas.XLS.

Las diferencias obtenidas en los comparativos de reservas para este ejemplo, son prácticamente nulas, por lo que concluimos que las reservas GAAP están bien calculadas.

Procederemos entonces a calcular la reserva para todas las pólizas tomando en cuenta todos los supuestos y ajustes involucrados con base en el modelo representativo construido. Como ya mencionamos la valuación se llevará a cabo en PTS, por lo que el vigor será cargado en este sistema y obtendremos los resultados para cada plan modelado y por ende, la valuación total de la reserva GAAP de la compañía.

#### 4.5 Resultados de la valuación de reservas.

Una vez que comprobamos que los factores y la valuación de la reserva están bien calculados, se procede a generarlos para todas las pólizas en vigor.

Para comprobar que los datos que se introducen en PTS sean realmente los de la cartera en vigor, se realizó el siguiente comparativo con el vigor inicial de pólizas.

| Concepto | Clave de plan T2020P |                 |      |        | Clave de plan T2020B |                 |      |       |
|----------|----------------------|-----------------|------|--------|----------------------|-----------------|------|-------|
|          | PTS                  | Hoja de Cálculo | DIF. | %      | PTS                  | Hoja de Cálculo | DIF. | %     |
| Pólizas  | 25,575               | 25,575          | 0    | 0.00%  | 18,437               | 18,437          | 0    | 0.00% |
| S.A.     | 3,154                | 3,154           | 0    | 0.00%  | 5,745                | 5,745           | 0    | 0.00% |
| Rva. SAP | 14,890               | 14,873          | -17  | -0.11% | 10,372               | 10,410          | 38   | 0.37% |

| Concepto | Clave de plan T55S |                 |      |       | Vigor TOTAL |                 |      |       |
|----------|--------------------|-----------------|------|-------|-------------|-----------------|------|-------|
|          | PTS                | Hoja de Cálculo | DIF. | %     | PTS         | Hoja de Cálculo | DIF. | %     |
| Pólizas  | 2,620              | 2,620           | 0    | 0.00% | 46,632      | 46,632          | 0    | 0.00% |
| S.A.     | 1,000              | 1,000           | 0    | 0.00% | 9,899       | 9,899           | 0    | 0.00% |
| Rva. SAP | 1,240              | 1,257           | 17   | 1.35% | 26,502      | 26,539          | 37   | 0.14% |

Como podemos ver prácticamente partimos de la misma base de vigor, se puede entonces continuar con la valuación de las reservas GAAP. Para esto presentamos un resumen de los supuestos considerados para la valuación:

| <b>Resumen de supuestos</b>                                   |           |
|---|-----------|
| <b>Años de proyección:</b>                                    | 20 años   |
| <b>Forma de pago:</b>   | Anual     |
| <b>Fecha de valuación:</b>                                    | 31/dic/99 |
| Las pólizas son emitidas a la mitad del año.                  |           |
| Los siniestros ocurren a la mitad del año.                    |           |
| La caducidad aplica al final del año.                         |           |
| Se incurre en gastos al principio del año.                    |           |
| No se considera reaseguro.                                    |           |
| No se considera capital mínimo requerido.                     |           |
| Supuestos SAP y GAAP del capítulo dos y tres respectivamente. |           |

En el siguiente cuadro se presentan las reservas SAP y GAAP de la compañía por año calendario para los veinte años siguientes a la fecha de valuación.

| Año          | Reserva          | Reserva GAAP     |            |
|--------------|------------------|------------------|------------|
|              | SAP              | Rva.Ben.         | Rva. Gtos. |
| 2000         | 36,403           | 50,876           | 47,345     |
| 2001         | 45,212           | 58,177           | 49,499     |
| 2002         | 53,327           | 64,723           | 50,492     |
| 2003         | 60,680           | 70,601           | 50,010     |
| 2004         | 66,368           | 75,300           | 48,101     |
| 2005         | 71,343           | 79,420           | 45,815     |
| 2006         | 74,996           | 82,288           | 43,127     |
| 2007         | 77,286           | 83,753           | 40,053     |
| 2008         | 78,171           | 83,736           | 36,673     |
| 2009         | 77,603           | 82,300           | 33,127     |
| 2010         | 75,527           | 79,539           | 29,494     |
| 2011         | 71,888           | 75,413           | 25,756     |
| 2012         | 66,624           | 69,777           | 21,896     |
| 2013         | 59,670           | 62,470           | 17,895     |
| 2014         | 50,948           | 53,326           | 13,733     |
| 2015         | 40,378           | 42,187           | 9,388      |
| 2016         | 28,086           | 29,266           | 5,125      |
| 2017         | 15,474           | 15,993           | 1,791      |
| 2018         | 5,391            | 5,428            | 0          |
| 2019         | 0                | 0                | 0          |
| <b>Total</b> | <b>1,055,375</b> | <b>1,164,573</b> |            |

Los reportes tal y como los genera PTS se pueden encontrar en el anexo cinco. También se anexan en el CD todos los archivos utilizados por PTS para la proyección de las reservas.

## 4.6 Estado de Resultados SAP vs GAAP.

A continuación veremos los estados de resultados SAP y GAAP de la compañía generados por PTS.

| Estado de Resultados Estatutario |                |               |               |                    |               |               |                    |               |               |                |
|----------------------------------|----------------|---------------|---------------|--------------------|---------------|---------------|--------------------|---------------|---------------|----------------|
|                                  | Valor Presente |               | TIR           | % del VP de Primas |               |               | % del VP de Primas |               |               |                |
| Flujo de Efectivo                | 71,444,611.83  |               | N/A           | 29.66%             |               |               | Comisiones         |               | 12.32%        |                |
| Utilidad Estatutaria             | 82,794,094.85  |               | N/A           | 34.37%             |               |               | Sinistros          |               | 54.49%        |                |
| Primas                           | 240,890,188.00 |               |               |                    |               |               |                    |               |               |                |
| Año Calendario                   |                |               |               |                    |               |               |                    |               |               |                |
| Concepto                         | 2000           | 2001          | 2002          | 2003               | 2004          | 2005          | 2006               | 2007          | 2008          | 2009           |
| <b>INGRESOS</b>                  |                |               |               |                    |               |               |                    |               |               |                |
| Prima                            | 36,388         | 33,334        | 31,433        | 30,157             | 27,875        | 26,888        | 25,935             | 25,014        | 24,124        | 23,263         |
| Ingreso por Inversión            | 3,269          | 4,645         | 6,114         | 7,638              | 9,268         | 10,996        | 12,768             | 14,580        | 16,434        | 18,329         |
| <b>TOTAL INGRESOS</b>            | <b>39,657</b>  | <b>37,979</b> | <b>37,547</b> | <b>37,795</b>      | <b>37,143</b> | <b>37,884</b> | <b>38,703</b>      | <b>39,594</b> | <b>40,558</b> | <b>41,592</b>  |
| <b>GASTOS</b>                    |                |               |               |                    |               |               |                    |               |               |                |
| Sinistros                        | 11,534         | 12,026        | 12,942        | 13,774             | 13,921        | 14,088        | 14,609             | 15,201        | 15,896        | 16,606         |
| Rescatos                         | 520            | 723           | 974           | 953                | 1,097         | 1,212         | 1,297              | 1,352         | 1,378         | 1,373          |
| Incremento de Reserva            | 9,900          | 8,809         | 8,116         | 7,353              | 5,688         | 4,975         | 3,653              | 2,290         | 885           | -568           |
| Comisiones                       | 8,806          | 5,448         | 3,812         | 2,273              | 648           | 612           | 578                | 545           | 514           | 484            |
| Otros Gastos                     | 5,458          | 5,000         | 4,715         | 4,524              | 4,181         | 4,033         | 3,890              | 3,752         | 3,619         | 3,489          |
| <b>TOTAL GASTOS</b>              | <b>36,218</b>  | <b>32,005</b> | <b>30,558</b> | <b>28,876</b>      | <b>25,536</b> | <b>24,921</b> | <b>24,027</b>      | <b>23,140</b> | <b>22,282</b> | <b>21,384</b>  |
| <b>GANANCIA OPERACIÓN</b>        |                |               |               |                    |               |               |                    |               |               |                |
| Ganancia antes de Impuesto       | 3,439          | 5,974         | 6,989         | 8,919              | 11,607        | 12,963        | 14,675             | 16,454        | 18,276        | 20,208         |
| Impuesto de ganancia             | 0              | 0             | 0             | 0                  | 0             | 0             | 0                  | 0             | 0             | 0              |
| Impuesto de utilidad             | 0              | 0             | 0             | 0                  | 0             | 0             | 0                  | 0             | 0             | 0              |
| Incremento de Impuesto           | 0              | 0             | 0             | 0                  | 0             | 0             | 0                  | 0             | 0             | 0              |
| <b>GANANCIA NETA</b>             | <b>3,439</b>   | <b>5,974</b>  | <b>6,989</b>  | <b>8,919</b>       | <b>11,607</b> | <b>12,963</b> | <b>14,675</b>      | <b>16,454</b> | <b>18,276</b> | <b>20,208</b>  |
| <b>UTILIDAD FINAL</b>            |                |               |               |                    |               |               |                    |               |               |                |
| Utilidad Inicial                 | 0              | 3,439         | 9,413         | 16,402             | 25,321        | 36,928        | 49,891             | 64,566        | 81,020        | 99,297         |
| Ganancia Neta                    | 3,439          | 5,974         | 6,989         | 8,919              | 11,607        | 12,963        | 14,675             | 16,454        | 18,276        | 20,208         |
| <b>UTILIDAD FINAL TOTAL</b>      | <b>3,439</b>   | <b>9,413</b>  | <b>16,402</b> | <b>25,321</b>      | <b>36,928</b> | <b>49,891</b> | <b>64,566</b>      | <b>81,020</b> | <b>99,296</b> | <b>119,505</b> |
| <b>Requerimiento de Capital</b>  |                |               |               |                    |               |               |                    |               |               |                |
| Utilidad en Libros               | 0              | 0             | 0             | 0                  | 0             | 0             | 0                  | 0             | 0             | 0              |
| Pólizas en Vigor                 | 3,439          | 5,622         | 6,024         | 7,238              | 9,012         | 9,178         | 9,561              | 9,836         | 9,972         | 10,030         |
|                                  | 40,057         | 36,262        | 33,861        | 32,137             | 29,972        | 28,793        | 27,660             | 26,570        | 25,521        | 24,511         |

Cifras en Miles de Pesos

Como podemos observar la Tasa Interna de Retorno(TIR) aparece como N/A, es decir, no aplica, ya que no consideramos requerimiento de capital como se puede ver en el antepenúltimo renglón del estado de resultados.

| <b>Estado de Resultados Estatutario</b> |                |                |                |                    |                |                |                |                    |                |                |
|---|----------------|----------------|----------------|--------------------|----------------|----------------|----------------|--------------------|----------------|----------------|
|   | Valor Presente |                | TIR            | % del VP de Primas |                |                |                | % del VP de Primas |                |                |
| Flujo de Efectivo                       | 71,444,611.83  |                | N/A            | 29.03%             |                |                |                | Comisiones         | 12.32%         |                |
| Utilidad Estatutaria                    | 82,794,094.85  |                | N/A            | 34.37%             |                |                |                | Sinistros          | 54.40%         |                |
| Primas                                  | 240,890,188.00 |                |                |                    |                |                |                |                    |                |                |
| Año Calendario                          |                |                |                |                    |                |                |                |                    |                |                |
| Concepto                                | 2010           | 2011           | 2012           | 2013               | 2014           | 2015           | 2016           | 2017               | 2018           | 2019           |
| <b>INGRESOS</b>                         |                |                |                |                    |                |                |                |                    |                |                |
| Prima                                   | 22,430         | 21,624         | 20,843         | 20,086             | 19,352         | 18,639         | 16,878         | 12,464             | 6,415          | 0              |
| Ingreso por Inversión                   | 20,278         | 22,289         | 24,371         | 26,531             | 28,777         | 31,119         | 33,550         | 36,115             | 38,984         | 42,303         |
| <b>TOTAL INGRESOS</b>                   | <b>42,708</b>  | <b>43,913</b>  | <b>45,214</b>  | <b>46,617</b>      | <b>48,129</b>  | <b>49,758</b>  | <b>50,428</b>  | <b>48,579</b>      | <b>45,399</b>  | <b>42,363</b>  |
| <b>GASTOS</b>                           |                |                |                |                    |                |                |                |                    |                |                |
| Sinistros                               | 17,318         | 18,046         | 18,825         | 19,659             | 20,540         | 21,442         | 21,341         | 18,371             | 12,202         | 4,224          |
| Rescatos                                | 1,338          | 1,272          | 1,176          | 1,047              | 887            | 695            | 469            | 253                | 89             | 0              |
| Incremento de Reserva                   | -2,077         | -3,639         | -5,263         | -6,956             | -8,722         | -10,570        | -12,292        | -12,612            | -10,083        | -5,391         |
| Comisiones                              | 456            | 429            | 403            | 378                | 355            | 333            | 248            | 150                | 69             | 0              |
| Otros Gastos                            | 3,365          | 3,244          | 3,126          | 3,013              | 2,903          | 2,796          | 2,532          | 1,870              | 962            | 0              |
| <b>TOTAL GASTOS</b>                     | <b>20,399</b>  | <b>19,352</b>  | <b>18,267</b>  | <b>17,143</b>      | <b>15,963</b>  | <b>14,695</b>  | <b>12,297</b>  | <b>8,032</b>       | <b>3,239</b>   | <b>-1,167</b>  |
| <b>GANANCIA OPERACIÓN</b>               |                |                |                |                    |                |                |                |                    |                |                |
| Ganancia antes de Impuesto              | 22,308         | 24,561         | 26,947         | 29,473             | 32,165         | 35,064         | 38,130         | 40,547             | 42,161         | 43,531         |
| Impuesto de ganancia                    | 0              | 0              | 0              | 0                  | 0              | 0              | 0              | 0                  | 0              | 0              |
| Impuesto de utilidad                    | 0              | 0              | 0              | 0                  | 0              | 0              | 0              | 0                  | 0              | 0              |
| Incremento de Impuesto                  | 0              | 0              | 0              | 0                  | 0              | 0              | 0              | 0                  | 0              | 0              |
| <b>GANANCIA NETA</b>                    | <b>22,308</b>  | <b>24,561</b>  | <b>26,947</b>  | <b>29,473</b>      | <b>32,165</b>  | <b>35,064</b>  | <b>38,130</b>  | <b>40,547</b>      | <b>42,161</b>  | <b>43,531</b>  |
| <b>UTILIDAD FINAL</b>                   |                |                |                |                    |                |                |                |                    |                |                |
| Utilidad Inicial                        | 119,505        | 141,813        | 166,374        | 193,321            | 222,794        | 254,999        | 290,023        | 328,153            | 368,700        | 410,861        |
| Ganancia Neta                           | 22,308         | 24,561         | 26,947         | 29,473             | 32,165         | 35,064         | 38,130         | 40,547             | 42,161         | 43,531         |
| <b>UTILIDAD FINAL TOTAL</b>             | <b>141,813</b> | <b>166,374</b> | <b>193,321</b> | <b>222,794</b>     | <b>254,999</b> | <b>290,023</b> | <b>328,153</b> | <b>368,700</b>     | <b>410,861</b> | <b>454,392</b> |
| Requerimiento de Capital                | 0              | 0              | 0              | 0                  | 0              | 0              | 0              | 0                  | 0              | 0              |
| Utilidad en Libros                      | 10,069         | 10,025         | 9,893          | 9,658              | 9,329          | 8,930          | 8,403          | 6,911              | 4,369          | 1,417          |
| Pólizas en Vigor                        | 23,538         | 22,601         | 21,698         | 20,827             | 19,997         | 19,176         | 17,465         | 12,635             | 6,162          | 0              |

Cifras en Miles de Pesos

Es importante que después de revisar las primeras proyecciones de los estados de resultados, verifiquemos si los supuestos fueron realmente los adecuados. Posteriormente, se deberá tomar en cuenta el principio Lock- In del capítulo dos, para revisar que los supuestos sean los adecuados para las emisiones subsecuentes. A continuación se presenta el estado de resultados de acuerdo a GAAP.

| Estado de Resultados GAAP                    |                            |                |               |               |                |               |                     |                |                |                |  |
|--|----------------------------|----------------|---------------|---------------|----------------|---------------|---------------------|----------------|----------------|----------------|--|
| Utilidad GAAP<br>Base de Amortización<br>DAC | Valor Presente             |                |               | TIR           | % VP de Primas |               | Valores Iniciales   |                |                |                |  |
|  | 52,789,437.18              | 240,890,187.52 | 61,036,235.63 | N/A           | 21.91%         |               | DAC no Amort. Comm. |                | 29,227,583.10  |                |  |
|  | Porcentaje de Recuperación |                |               |               |                |               | 25.34%              |                |                |                |  |
| Concepto                                     | Año Calendario             |                |               |               |                |               |                     |                |                |                |  |
|  | 2000                       | 2001           | 2002          | 2003          | 2004           | 2005          | 2006                | 2007           | 2008           | 2009           |  |
| <b>INGRESOS</b>                              |                            |                |               |               |                |               |                     |                |                |                |  |
| Prima  | 36,368                     | 33,334         | 31,433        | 30,157        | 27,875         | 26,888        | 25,935              | 25,014         | 24,124         | 23,263         |  |
| Ingreso por Inversión                        | 3,269                      | 4,645          | 6,114         | 7,638         | 9,268          | 10,996        | 12,768              | 14,580         | 16,434         | 18,329         |  |
| <b>TOTAL INGRESOS</b>                        | <b>39,657</b>              | <b>37,979</b>  | <b>37,547</b> | <b>37,795</b> | <b>37,143</b>  | <b>37,884</b> | <b>38,703</b>       | <b>39,594</b>  | <b>40,558</b>  | <b>41,592</b>  |  |
| <b>GASTOS</b>                                |                            |                |               |               |                |               |                     |                |                |                |  |
| Sinistros                                    | 11,534                     | 12,026         | 12,942        | 13,774        | 13,921         | 14,088        | 14,609              | 15,201         | 15,886         | 16,606         |  |
| Rescates                                     | 520                        | 723            | 974           | 953           | 1,097          | 1,212         | 1,297               | 1,352          | 1,378          | 1,373          |  |
| Incremento de Reserva                        | 7,882                      | 7,301          | 6,546         | 5,878         | 4,698          | 4,121         | 2,868               | 1,465          | -17            | -1,436         |  |
| Gastos No diferibles                         | 6,344                      | 5,790          | 5,441         | 5,210         | 4,830          | 4,645         | 4,468               | 4,297          | 4,132          | 3,973          |  |
| <b>TOTAL GASTOS</b>                          | <b>26,280</b>              | <b>25,840</b>  | <b>25,903</b> | <b>25,815</b> | <b>24,546</b>  | <b>24,068</b> | <b>23,242</b>       | <b>22,315</b>  | <b>21,379</b>  | <b>20,517</b>  |  |
| <b>INGRESO NETO GAAP</b>                     |                            |                |               |               |                |               |                     |                |                |                |  |
| Ingreso Bruto                                | 13,377                     | 12,140         | 11,644        | 11,980        | 12,597         | 13,817        | 15,460              | 17,279         | 19,179         | 21,076         |  |
| Amort. DAC (Comisiones)                      | 3,261                      | 2,260          | 1,853         | 1,810         | 1,661          | 1,999         | 2,361               | 2,707          | 2,984          | 3,136          |  |
| Amort. DAC (No Comisiones)                   | 282                        | 244            | 240           | 258           | 247            | 296           | 328                 | 367            | 396            | 409            |  |
| Ingreso GAAP antes de Imp.                   | 9,834                      | 9,636          | 9,551         | 9,912         | 10,688         | 11,532        | 12,771              | 14,205         | 15,799         | 17,531         |  |
| <b>TOTAL INGRESO NETO GAAP</b>               | <b>9,834</b>               | <b>9,636</b>   | <b>9,551</b>  | <b>9,912</b>  | <b>10,688</b>  | <b>11,532</b> | <b>12,771</b>       | <b>14,205</b>  | <b>15,799</b>  | <b>17,531</b>  |  |
| <b>UTILIDAD</b>                              |                            |                |               |               |                |               |                     |                |                |                |  |
| Utilidad Inicial                             | 26,477                     | 36,311         | 45,947        | 55,497        | 65,409         | 76,098        | 87,630              | 100,401        | 114,607        | 130,405        |  |
| Ingreso Neto GAAP                            | 9,834                      | 9,636          | 9,551         | 9,912         | 10,689         | 11,532        | 12,772              | 14,206         | 15,798         | 17,530         |  |
| <b>UTILIDAD FINAL</b>                        | <b>36,311</b>              | <b>45,947</b>  | <b>55,498</b> | <b>65,409</b> | <b>76,098</b>  | <b>87,630</b> | <b>100,402</b>      | <b>114,607</b> | <b>130,405</b> | <b>147,935</b> |  |
| <b>Utilidad en Libros GAAP</b>               |                            |                |               |               |                |               |                     |                |                |                |  |
| DAC No Amort. (Comisiones)                   | 7,120                      | 5,914          | 4,841         | 4,223         | 3,984          | 3,732         | 3,789               | 3,914          | 4,051          | 4,164          |  |
| DAC No Amort. ( No Comis.)                   | 40,941                     | 43,338         | 44,571        | 44,347        | 42,685         | 40,686        | 38,326              | 35,619         | 32,634         | 29,498         |  |
| Reserva GAAP                                 | 6,404                      | 6,161          | 5,820         | 5,663         | 5,415          | 5,129         | 4,801               | 4,434          | 4,039          | 3,629          |  |
|  | 50,876                     | 58,177         | 64,723        | 70,601        | 75,300         | 79,420        | 82,288              | 83,753         | 83,736         | 82,300         |  |

Cifras en Miles de Pesos



En términos generales esta es la forma que debe tener un estado de resultados GAAP, que a diferencia del estado de resultados SAP, este nos presenta la amortización de los gastos diferibles en el periodo y los gastos por amortizar (reserva DAC).

## Estado de Resultados GAAP

| Utilidad GAAP<br>Base de Amortización<br>DAC | Valor Presento |                | TIR                        | % VP de Primas |                | Valores Iniciales     |                |                |                |                |      |  |      |  |      |  |      |  |      |  |  |
|--|----------------|----------------|----------------------------|----------------|----------------|-----------------------|----------------|----------------|----------------|----------------|------|--|------|--|------|--|------|--|------|--|--|
|  | 52,709,437.18  | 240,890,187.52 | N/A                        | 21.91%         |                | DAC no Amort.Comm.    | 29,227,593.10  |                |                |                |      |  |      |  |      |  |      |  |      |  |  |
|  | 61,036,235.63  |                |                            |                |                | DAC no Amort.No Comm. |                | 7,522,064.41   |                |                |      |  |      |  |      |  |      |  |      |  |  |
|  |                |                | Porcentaje de Recuperación |                |                | 25.34%                |                |                |                |                |      |  |      |  |      |  |      |  |      |  |  |
| Concepto                                     | 2010           |                | 2011                       |                | 2012           |                       | 2013           |                | 2014           |                | 2015 |  | 2016 |  | 2017 |  | 2018 |  | 2019 |  |  |
| <b>INGRESOS</b>                              |                |                |                            |                |                |                       |                |                |                |                |      |  |      |  |      |  |      |  |      |  |  |
| Prima  | 22,430         | 21,624         | 20,843                     | 20,066         | 19,352         | 18,639                | 16,878         | 12,464         | 6,415          | 0              |      |  |      |  |      |  |      |  |      |  |  |
| Ingreso por Inversión                        | 20,278         | 22,289         | 24,371                     | 26,531         | 28,777         | 31,119                | 33,550         | 36,115         | 38,984         | 42,363         |      |  |      |  |      |  |      |  |      |  |  |
| <b>TOTAL INGRESOS</b>                        | <b>42,708</b>  | <b>43,913</b>  | <b>45,214</b>              | <b>46,617</b>  | <b>48,129</b>  | <b>49,758</b>         | <b>50,428</b>  | <b>48,579</b>  | <b>45,399</b>  | <b>42,363</b>  |      |  |      |  |      |  |      |  |      |  |  |
| <b>GASTOS</b>                                |                |                |                            |                |                |                       |                |                |                |                |      |  |      |  |      |  |      |  |      |  |  |
| Sinistros                                    | 17,318         | 18,046         | 18,825                     | 19,650         | 20,540         | 21,442                | 21,341         | 18,371         | 12,202         | 4,224          |      |  |      |  |      |  |      |  |      |  |  |
| Roscates                                     | 1,338          | 1,272          | 1,176                      | 1,047          | 887            | 605                   | 409            | 253            | 89             | 0              |      |  |      |  |      |  |      |  |      |  |  |
| Incremento de Reserva                        | -2,761         | -4,127         | -5,636                     | -7,306         | -9,145         | -11,138               | -12,922        | -13,273        | -10,565        | -5,428         |      |  |      |  |      |  |      |  |      |  |  |
| Gastos No diferibles                         | 3,820          | 3,672          | 3,529                      | 3,391          | 3,258          | 3,129                 | 2,779          | 2,020          | 1,031          | 0              |      |  |      |  |      |  |      |  |      |  |  |
| <b>TOTAL GASTOS</b>                          | <b>19,715</b>  | <b>18,864</b>  | <b>17,894</b>              | <b>16,792</b>  | <b>15,540</b>  | <b>14,127</b>         | <b>11,667</b>  | <b>7,371</b>   | <b>2,757</b>   | <b>-1,204</b>  |      |  |      |  |      |  |      |  |      |  |  |
| <b>INGRESO NETO GAAP</b>                     |                |                |                            |                |                |                       |                |                |                |                |      |  |      |  |      |  |      |  |      |  |  |
| Ingreso Bruto                                | 22,993         | 25,048         | 27,319                     | 29,825         | 32,588         | 35,631                | 38,760         | 41,208         | 42,643         | 43,567         |      |  |      |  |      |  |      |  |      |  |  |
| Amort. DAC (Comisiones)                      | 3,218          | 3,315          | 3,428                      | 3,557          | 3,704          | 3,871                 | 3,804          | 2,987          | 1,615          | 0              |      |  |      |  |      |  |      |  |      |  |  |
| Amort. DAC (No Comisiones)                   | 415            | 423            | 432                        | 444            | 458            | 474                   | 459            | 348            | 176            | 0              |      |  |      |  |      |  |      |  |      |  |  |
| Ingreso GAAP antes de Imp.                   | 19,360         | 21,310         | 23,459                     | 25,824         | 28,426         | 31,285                | 34,497         | 37,873         | 40,852         | 43,567         |      |  |      |  |      |  |      |  |      |  |  |
| <b>TOTAL INGRESO NETO GAAP</b>               | <b>19,360</b>  | <b>21,310</b>  | <b>23,459</b>              | <b>25,824</b>  | <b>28,426</b>  | <b>31,285</b>         | <b>34,497</b>  | <b>37,873</b>  | <b>40,852</b>  | <b>43,567</b>  |      |  |      |  |      |  |      |  |      |  |  |
| <b>UTILIDAD</b>                              |                |                |                            |                |                |                       |                |                |                |                |      |  |      |  |      |  |      |  |      |  |  |
| Utilidad Inicial                             | 147,935        | 167,295        | 188,606                    | 212,065        | 237,889        | 266,315               | 297,601        | 332,098        | 369,972        | 410,824        |      |  |      |  |      |  |      |  |      |  |  |
| Ingreso Neto GAAP                            | 19,359         | 21,311         | 23,459                     | 25,824         | 28,426         | 31,286                | 34,497         | 37,873         | 40,852         | 43,567         |      |  |      |  |      |  |      |  |      |  |  |
| <b>UTILIDAD FINAL</b>                        | <b>167,294</b> | <b>188,606</b> | <b>212,064</b>             | <b>237,889</b> | <b>266,315</b> | <b>297,601</b>        | <b>332,098</b> | <b>369,971</b> | <b>410,824</b> | <b>454,391</b> |      |  |      |  |      |  |      |  |      |  |  |
| Utilidad en Libros GAAP                      | 4,196          | 4,163          | 4,127                      | 4,088          | 4,043          | 3,988                 | 3,993          | 3,633          | 2,930          | 1,458          |      |  |      |  |      |  |      |  |      |  |  |
| DAC No Amort. (Comisiones)                   | 26,280         | 22,965         | 19,538                     | 15,981         | 12,276         | 8,405                 | 4,602          | 1,615          | 0              | 0              |      |  |      |  |      |  |      |  |      |  |  |
| DAC No Amort. (No Comis.)                    | 3,214          | 2,791          | 2,359                      | 1,915          | 1,457          | 983                   | 524            | 176            | 0              | 0              |      |  |      |  |      |  |      |  |      |  |  |
| Reserva GAAP                                 | 79,539         | 75,413         | 69,777                     | 62,470         | 53,326         | 42,187                | 29,266         | 15,993         | 5,428          | 0              |      |  |      |  |      |  |      |  |      |  |  |

Cifras en Miles de Posos

Es importante mencionar que estos resultados son consecuencia de los supuestos que determinamos para el futuro. Con una caducidad más alta, un gasto mayor, o factores de selección sobre mortalidad diferentes, se modificarían los resultados que se obtuvieron, y en lugar de tener ganancias tal vez tendríamos pérdidas.

Finalmente podemos concluir que los estados de resultados de acuerdo a GAAP que hemos elaborado son de gran utilidad para la compañía, y pueden generarse de manera trimestral para poder darle el seguimiento adecuado a los supuestos y detectar cualquier cambio en los resultados de la empresa.

A manera de conclusión, también podemos mencionar que las reservas SAP o estado de resultados estatutario, es calculado en este trabajo como punto de referencia, no como parámetro para determinar si el estado de resultados GAAP es correcto. Sin embargo, se pudo haber calculado la reserva GAAP de la compañía directamente, sin mencionar la norma común de valuación de reservas(SAP).

## CONCLUSIONES

Los estados de resultados de la valuación de reservas GAAP juegan un papel muy importante dentro de las compañías de seguros, es por ello que debemos poner mucha atención en su correcta elaboración, ya que de eso dependerá su futuro y las decisiones que se tomen sobre el negocio.

Lo más importante de todo es empezar a trabajar sobre la implantación de éstas reservas, entre más experiencia se tenga, las proyecciones serán mejores, ya que podremos determinar supuestos más reales y por ende podremos ver reflejado el comportamiento del negocio correctamente y presentar los estados de resultados a los inversionistas de una manera más clara y comprensible.

Hoy en día la valuación de reservas GAAP es una de las actividades más importantes y de mayor interés dentro de las compañías aseguradoras. Cada vez se vuelve más necesaria debido al constante incremento de inversión extranjera en nuestro país, que requerirá de gente mejor preparada.

Este trabajo muestra la implantación de reservas GAAP dentro de una compañía de seguros relativamente pequeña, más sin embargo, la implantación en compañías con un mayor volumen de pólizas es muy similar y se aplican muchos de los aspectos tratados en este trabajo. Esperamos sea un buen ejemplo para todo aquel involucrado en la implantación de reservas de este tipo.

Podemos decir que la implantación de reservas GAAP, debe de seguir la estructura de este trabajo, sin embargo, puede variar y aplicarse muchos otros aspectos técnicos, todo depende del actuario, la compañía de seguros y la teoría GAAP a aplicar. Se presentan incluso, las hojas de cálculo, para que se puedan ver de manera más clara los ejemplos de cálculo y puedan ayudar o servir para cualquier otro plan o producto que se quiera modelar o valorar bajo los principios GAAP.

Es importante mencionar que solo se pretendía presentar la implantación de reservas bajo los principios de contabilidad SFAS60 para los seguros de vida a largo plazo, dejamos al actuario la revisión de los demás principios GAAP que se aplican a los diversos planes del seguro de vida, tanto tradicional como flexible. Pocos trabajos existen sobre este tema, así que podrían servir como tema de desarrollo para generaciones posteriores.

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¿Ganancias o Perdidas?  
Expresión Financiera de Seguros de Largo Plazo  
Sofía Romano Ruíz

# **ANEXO 1**

Statement of Financial Accounting Standards No. 59  
 Deferral of the Effective Date of Certain  
 Accounting Requirements for Pension Plans  
 of State and Local Governmental Units

an amendment of FASB Statement No. 35

STATUS

Issued: April 1982

Effective Date: April 1982 retroactive to fiscal years beginning after December 15, 1980

Affects: Amends FAS 35, paragraph 30

Affected by: Superseded by FAS 73

Statement of Financial Accounting Standards No. 60  
 Accounting and Reporting by Insurance Enterprises

STATUS

Issued: June 1982

Effective Date: For fiscal years beginning after December 15, 1982

Affects: Amends APB 11, paragraph 6  
 Supersedes APB 23, paragraphs 26 through 30 and footnote 11  
 Amends APB 30, footnote 8  
 Amends FAS 5, paragraphs 41 and 102  
 Amends FAS 32, Appendices A and B  
 Amends FIN 15, paragraphs 2 and 4  
 Amends FIN 22, paragraph 7

Affected by: Paragraphs 6 and 50 amended by FAS 97  
 Paragraph 15 superseded by FAS 97  
 Paragraphs 38 through 40 and 60(D) superseded by FAS 113  
 Paragraphs 43 and 44 and footnote 7 superseded by FAS 115  
 Paragraph 47 amended by FAS 114  
 Paragraph 49 superseded by FAS 91  
 Paragraph 50 and 51 amended by FAS 115  
 Paragraphs 55 through 58, 60(i), 60(j), and footnote 8 superseded by FAS 96 and FAS 109  
 Paragraph 59 amended by FAS 109

Other Interjective Transactions: FIN 40  
 (FIN 84-3) (Superseded by FAS 96 and FAS 109)

SUMMARY

This Statement extracts the specialized principles and practices from the AICPA insurance industry related (holder and Statements of Position and establishes financial accounting and reporting standards for insurance enterprises other than mutual life insurance corporations, investment corporations, and mutual benefit societies. Insurance contracts, for purposes of this Statement, need to be classified as short-duration or long-duration contracts. Long-duration contracts include contracts, such as whole-life, guaranteed renewable term life, endowment, annuity, and title insurance contracts, that are expected to remain in force for an extended period. All other insurance contracts are considered short-duration contracts and include most property and liability insurance contracts.

Premiums from short-duration contracts ordinarily are recognized as revenue over the period of the contract in proportion to the amount of insurance protection provided. Claims costs, including outliness of costs for claims relating to insured events that have occurred but have not been reported to the insurer, are recognized when incurred.

Investments are reported as follows: common and noncumulative preferred stocks at market, bonds and redeemable preferred stocks at amortized cost, mortgage loans at outstanding principal or amortized cost, and real estate at depreciated cost. Realized investment gains and losses are reported in the income statement below operating income and net of applicable income taxes. Unrealized investment gains and losses, net of applicable income taxes, are included in stockholders' (policyholders') equity.

Statement of Financial Accounting Standards No. 60  
Accounting and Reporting by Insurance Enterprises

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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 contracts 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 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.

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. Withdrawals and reserves 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,<sup>1</sup> and title insurance enterprises. Except for the sections on premium revenue and claim cost recognition and acquisition cost (paragraphs 9-11, 13-16, 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 force<sup>2</sup> 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 noncancelable 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 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 while 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 actuarial cost of expected investment yields, mortality, morbidity, termination, 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.

<sup>1</sup>Property and liability insurance enterprises, for purposes of this Statement, include stock enterprises, mutual enterprises, and reorganized or intercompany exchanges.

<sup>2</sup>The term refers to the period of coverage, that is, the period during which the occurrence of insured events can result in liabilities of the insurer enterprise.

<sup>3</sup>Items omitted in the glossary (Appendix A) are in boldface type the first time they appear in this Statement.

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 investment, 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 as 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 insurance protection provided 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 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 premium, using estimates based on past experience and other sources. If not reasonably estimable, premium revenue and costs shall be recognized when agents report the incidence 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 the insurance premiums are recognized as revenue (paragraphs 13 and 14).

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.<sup>1</sup> Changes in estimates of claim costs resulting from the continuous review of trends and differences between estimated 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,

lien, 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 (unleveraged 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 adjuster fees. Claim adjustment expenses also include other costs that cannot be associated with specific claims but are related to claims paid or in the process of settlement, such as internal costs of the claims function.<sup>2</sup>

##### Liability for Future Policy Benefits

21. A liability for future policy benefits relating to long-duration contracts other than title insurance contracts (paragraph 13) 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 premiums 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 other factors, applicable at the time the insurance contracts are made. The liability also shall consider other assumptions relating to guaranteed contract benefits, such as expenses, unusual endorsements, 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 "back-to-coverys") 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 charges occur.

##### Investment Yields

22. Interest assumptions used in estimating the liability for future policy benefits shall be based on estimates of investment yields (not 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 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, portfolios 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, nonoccupational and guaranteed renewable accident and health insurance contracts) and other factors, such as occupational class, working period, sex, age, and benefit period, shall be considered in making morbidity assumptions. The risk of annulment (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 occupational terminations and nonoccupational benefits, using anticipated termination rates and contractual nonoccupational 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 repre-

<sup>1</sup> Certain disclosures are required if the true value of money is established in valuing liabilities for unpaid claims and claim adjustment expenses relating to short-duration contracts (paragraph 14b2).

<sup>2</sup> The insurance issuer shall disclose adjustment, which generally consists of fixed costs associated with a premium cost liability if a history of losses including claim settlement, is directly or indirectly an expense in period even before the costs are fully paid.



scrutiny 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 cost 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 cost 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.<sup>4</sup>

34. A premium deficiency shall not 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 contracts 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 XXX

Less the present value of future gross premiums, determined using revised assumptions based on actual and anticipated experience XX

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

Premium deficiency XXX

XXX

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. Recoverables 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 27). 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, 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 that 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 reversions and that use life insurance dividend scales unrelated to actual net income, policyholders' dividends based on dividends participated or intended to determine gross premiums or

<sup>4</sup>Disclosure is required regarding whether the insurance enterprise considers anticipated income before determining if a premium deficiency relating to short-duration contracts exists (paragraph 32).

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 nonconvertible 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 as 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 non-amortized 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 before 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 accumulated (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.<sup>5</sup>

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.

#### 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. Impaired 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 risk 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),<sup>6</sup> timing differences (paragraph 18c) 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 had filed on the basis on which financial statements are prepared, including any resulting change in category of taxation.

56. Although (a) special deductions (allowances) 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 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, unless known or anticipated circumstances indicate that future taxable income resulting from the reversal of timing differences will be offset by the deductions. In the case of provisions for policyholder dividends, the full 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 retained related 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 difference reverses. 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

<sup>5</sup>The Act encompasses creation of total reserves of the insurance enterprise, but the determination of tax is complex because of the manner in which total income is classified as investment income, plus the operation of including investment income and less special deductions for certain annuities and health, group life, and non-qualifying investment contracts. Special deductions apply from operations previously included from tax and the special deductions, and the nonrecognition of those amounts. Specific income amounts of (a) taxable investment income, (b) 30 percent of the reserve by which gains upon operations exceed taxable investment income, and (c) any reduction to policyholders' surplus. If gains from operations in less than taxable investment income, the lower amount, plus any reduction to policyholders' surplus, is taxable income. If a loss from operations occurs, there is no taxable income except to the extent that there are reductions to policyholders' surplus. The amount of the loss from operations for policyholder dividends and the special deductions are limited and cannot be carried forward to subsequent periods.

<sup>6</sup>This paragraph is not intended to prohibit the accrual of losses on price-earnings bonds when both conditions in paragraph 41 of FASB Statement No. 3, *Accounting for Contingencies*, are met.

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 reported 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 difference reverses, regardless of whether the life insurance enterprise uses the gross change of 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 cause 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:

- The basis for estimating the liabilities for unpaid claims and claim adjustment expenses
- The methods and assumptions used in estimating the liability for future policy benefits with disclosure of the average rate of assumed investment yields in effect for the current year encouraged
- The nature of acquisition costs capitalized, the method of amortizing those costs, and the amount of those costs amortized for the period
- 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

- Whether the insurance enterprise considers anticipated investment income in determining if a premium deficiency relating to short-duration contracts exists
- The nature and significance of reinsurance transactions to the insurance enterprise's operations, including reinsurance premiums assumed and ceded, and netwired amounts that are recoverable from reinsurers and that reduce the liabilities for unpaid claims and claim adjustment expenses
- 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
- 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:
  - The amount of statutory capital and surplus
  - 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
  - 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

For life insurance enterprises on a parent of a life insurance enterprise that is the consolidated account for by the equity method:

- 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
- The accumulated amount of policyholders' surplus for which income taxes have not been accrued

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

#### Assessments to Other Prearrangements

61. The following footnote is added in the end of paragraph 6 of Opinion 11:

For life insurance enterprises, also refer to paragraphs 33-39 and subparagraphs 6(f) and 6(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. 3, *Accounting for Contingencies*, paragraph 4 of FASB Interpretation No. 15, *Translation of Unauthorized Policy Acquisition Costs by a Stock Life Insurance Company*, and paragraph 7 of FASB Interpretation No. 22, *Applicability of Indefinite Deferral 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 (SOP) 78-6, *Accounting for Property and Liability Insurance Companies*, and 79-1, *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 Statement No. 31, *Specialized Accounting and Reporting Principles and Practices in AICPA Statements of Position and Guides on Accounting and Auditing Matters*.

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. Rist,  
Chairman  
Frank E. Block

John W. March  
Robert A. Morgan  
David Meece

Robert T. Sproue  
Ralph E. Walters

#### Appendix A

#### GLOSSARY

64. 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

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 retrospective 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 30 of APB Opinion No. 20, *Accounting Changes*.)

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 variable

An insurance enterprise that sells insurance to groups with similar exposures, 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 incurring of hospital or medical bills; the destruction of 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 settling 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.

#### Group premium

The premium charged to a policyholder for an insurance contract. Also refers 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.

#### Insured but not reported claim

Claims relating to insured events that have occurred but have not yet been reported to the insurer or retrovers at 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 at 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.

#### Nonadversely affected

Those benefits in a life insurance contract that the policyholder does not forfeit, even for failure to pay premiums. Nonadversely affected 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* 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 in 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 benefit.

**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 persistence, which is the renewal quality of insurance contracts, that is, the number of insureds that keep their insurance in force during a period. Persistence varies by plan of insurance, age at issue, year of loss, 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, identifying 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 (contract-

ual 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 nonforfeiture benefits.

**Appendix B****BACKGROUND INFORMATION AND SUMMARY OF CONSIDERATION OF COMMENTS ON EXPOSURE DRAFT**

61. As discussed in Statement 32, the FASB is extracting the specialized<sup>1</sup> accounting and reporting principles and practices from AICPA SOP's 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 SOP's 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.

62. Board members have a vested interest in the issuance of this Statement on the basis that it is an appropriate extraction of existing specialized principles and practices and that a comprehensive reevaluation 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 SOP's. 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.

63. 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 insured life insurance enterprises, assessment enterprises, and financial 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 SOP's 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 provision 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 classified by type of insurance provision 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 SOP's, 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 SOP's, 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 3 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 SOP's 78-6, 79-3, and 80-1 and is consistent 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 prohibited.

**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 renewed 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

<sup>1</sup>The term specialized is used in order to refer to those accounting and reporting principles and practices in AICPA Guides and SOP's that are neither supported by nor included in Accounting Research Bulletins, APB Opinions, FASB Statements, or FASB Interpretations.

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 that methods of defining acquisition costs to be capitalized.

#### Disclosure of the Average Rate of Assumed Investment Yields

78. Respondents commented on the benefit and cost of specificity 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 benefits 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 Increasing 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 disclosing 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 Codes 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 78-4. 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 relative 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 amounts of statutory capital and surplus, minimum statutory requirements when significant, and statutory limitations on the payment of dividends. Other respondents recommended that the proposed disclosure parallel those in the SLC's recent revision of Article 7 of Regulation 5 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(b) 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 incurred events occur and that life insurance enterprises currently do not accrue 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 the 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 Codes 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 to 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.

**ANEXO 2**

| Tabla de Mortalidad Exp. Méx. Básica 82-89 |      |      |          |
|--|------|------|----------|
| Edad                                       | Qx   | Edad | qx       |
| 12   | 0.60 | 56   | 8.69     |
| 13   | 0.61 | 57   | 9.49     |
| 14   | 0.61 | 58   | 10.36    |
| 15   | 0.62 | 59   | 11.32    |
| 16   | 0.63 | 60   | 12.37    |
| 17   | 0.64 | 61   | 13.51    |
| 18   | 0.65 | 62   | 14.76    |
| 19   | 0.67 | 63   | 16.13    |
| 20   | 0.68 | 64   | 17.62    |
| 21   | 0.70 | 65   | 19.24    |
| 22   | 0.72 | 66   | 21.02    |
| 23   | 0.74 | 67   | 22.96    |
| 24   | 0.77 | 68   | 25.07    |
| 25   | 0.79 | 69   | 27.39    |
| 26   | 0.82 | 70   | 29.92    |
| 27   | 0.86 | 71   | 32.70    |
| 28   | 0.90 | 72   | 34.33    |
| 29   | 0.94 | 73   | 37.68    |
| 30   | 0.99 | 74   | 41.29    |
| 31   | 1.04 | 75   | 45.20    |
| 32   | 1.10 | 76   | 49.43    |
| 33   | 1.38 | 77   | 54.02    |
| 34   | 1.47 | 78   | 58.99    |
| 35   | 1.58 | 79   | 64.39    |
| 36   | 1.69 | 80   | 70.22    |
| 37   | 1.81 | 81   | 76.54    |
| 38   | 1.95 | 82   | 83.37    |
| 39   | 2.10 | 83   | 90.76    |
| 40   | 2.27 | 84   | 98.77    |
| 41   | 2.45 | 85   | 107.50   |
| 42   | 2.65 | 86   | 117.01   |
| 43   | 2.87 | 87   | 127.25   |
| 44   | 3.11 | 88   | 138.17   |
| 45   | 3.38 | 89   | 149.81   |
| 46   | 3.67 | 90   | 162.13   |
| 47   | 3.99 | 91   | 175.10   |
| 48   | 4.35 | 92   | 188.66   |
| 49   | 4.73 | 93   | 202.59   |
| 50   | 5.15 | 94   | 239.48   |
| 51   | 5.62 | 95   | 258.13   |
| 52   | 6.12 | 96   | 277.95   |
| 53   | 6.68 | 97   | 298.98   |
| 54   | 7.29 | 98   | 321.21   |
| 55   | 7.96 | 99   | 1,000.00 |



| <b>Tabla de Mortalidad CNSF - I ( 1991 - 1998)</b> |           |             |           |
|--|-----------|-------------|-----------|
| <b>Edad</b>  | <b>Qx</b> | <b>Edad</b> | <b>qx</b> |
| 12   | 0.396     | 56          | 10.330    |
| 13   | 0.427     | 57          | 11.119    |
| 14   | 0.460     | 58          | 11.967    |
| 15   | 0.495     | 59          | 12.879    |
| 16   | 0.533     | 60          | 13.860    |
| 17   | 0.575     | 61          | 14.914    |
| 18   | 0.619     | 62          | 16.048    |
| 19   | 0.667     | 63          | 17.265    |
| 20   | 0.718     | 64          | 18.574    |
| 21   | 0.773     | 65          | 19.980    |
| 22   | 0.833     | 66          | 21.490    |
| 23   | 0.897     | 67          | 23.111    |
| 24   | 0.966     | 68          | 24.851    |
| 25   | 1.041     | 69          | 26.720    |
| 26   | 1.121     | 70          | 28.724    |
| 27   | 1.207     | 71          | 30.874    |
| 28   | 1.300     | 72          | 33.180    |
| 29   | 1.400     | 73          | 35.651    |
| 30   | 1.508     | 74          | 38.300    |
| 31   | 1.624     | 75          | 41.136    |
| 32   | 1.749     | 76          | 44.174    |
| 33   | 1.884     | 77          | 47.424    |
| 34   | 2.029     | 78          | 50.902    |
| 35   | 2.186     | 79          | 54.619    |
| 36   | 2.354     | 80          | 58.592    |
| 37   | 2.535     | 81          | 62.834    |
| 38   | 2.730     | 82          | 67.362    |
| 39   | 2.940     | 83          | 72.190    |
| 40   | 3.166     | 84          | 77.337    |
| 41   | 3.410     | 85          | 82.817    |
| 42   | 3.672     | 86          | 88.649    |
| 43   | 3.954     | 87          | 94.850    |
| 44   | 4.258     | 88          | 101.436   |
| 45   | 4.585     | 89          | 108.424   |
| 46   | 4.938     | 90          | 115.832   |
| 47   | 5.317     | 91          | 123.677   |
| 48   | 5.725     | 92          | 131.973   |
| 49   | 6.164     | 93          | 140.737   |
| 50   | 6.637     | 94          | 149.983   |
| 51   | 7.145     | 95          | 159.723   |
| 52   | 7.693     | 96          | 169.970   |
| 53   | 8.282     | 97          | 180.733   |
| 54   | 8.915     | 98          | 192.020   |
| 55   | 9.597     | 99          | 203.837   |

## **ANEXO 3**

## Plan T2020B (Forma de Pago Mensual)

| Análisis de Caducidad o Persistencia  |         |                   |                |
|---|---------|-------------------|----------------|
| Pólizas Emitidas en: 1997<br>Pólizas Colocadas:<br>Pólizas No Colocadas:<br>Total de Pólizas Emitidas | Pólizas | Indicadores       |                |
|   |         | %<br>Persistencia | %<br>Caducidad |
| AL PRIMER ANIVERSARIO EN 1998   |         |                   |                |
| Pólizas pagando primas antes del fin del periodo de gracia  | 4,719   | 82                |                |
| Pólizas entrando en cobro al primer aniversario o antes   | 60      | 1                 |                |
| Pólizas no en vigor al fin del periodo de gracia  | 949     |                   | 17             |
| AL SEGUNDO ANIVERSARIO EN 1999 PAGANDO PRIMAS AL PRIMERO  |         |                   |                |
| Pólizas pagando primas antes del fin del periodo de gracia  | 4,021   | 84                |                |
| Pólizas entrando en cobro al segundo aniversario o antes  | 39      | 1                 |                |
| Pólizas no en vigor al fin del periodo de gracia  | 659     |                   | 14             |
| AL SEGUNDO ANIVERSARIO EN 1999 Y EN COBRO AL PRIMERO  |         |                   |                |
| Pólizas continuando en cobro al segundo aniversario   | 60      | 1                 |                |
| AL TERCER ANIVERSARIO EN 2000 PAGANDO PRIMAS AL SEGUNDO   |         |                   |                |
| Pólizas pagando primas antes del fin del periodo de gracia  | 1,854   | 45                |                |
| Pólizas entrando en cobro al tercer aniversario o antes   | 2,120   | 51                |                |
| Pólizas no en vigor al fin del periodo de gracia  | 47      |                   | 1              |
| AL TERCER ANIVERSARIO EN 2000 Y EN COBRO AL SEGUNDO   |         |                   |                |
| Pólizas continuando en cobro al segundo aniversario   | 98      | 2                 |                |
| Pólizas no en vigor al fin del periodo de gracia  | 1       |                   | 1              |

| Análisis de Caducidad o Persistencia  |         |                   |                |
|---|---------|-------------------|----------------|
| Pólizas Emitidas en: 1998<br>Pólizas Colocadas:<br>Pólizas No Colocadas:<br>Total de Pólizas Emitidas | Pólizas | Indicadores       |                |
|   |         | %<br>Persistencia | %<br>Caducidad |
| AL PRIMER ANIVERSARIO EN 1999   |         |                   |                |
| Pólizas pagando primas antes del fin del periodo de gracia  | 7,664   | 84                |                |
| Pólizas entrando en cobro al primer aniversario o antes   | 99      | 1                 |                |
| Pólizas no en vigor al fin del periodo de gracia  | 1,341   |                   | 15             |
| AL SEGUNDO ANIVERSARIO EN 2000 PAGANDO PRIMAS AL PRIMERO  |         |                   |                |
| Pólizas pagando primas antes del fin del periodo de gracia  | 5,276   | 68                |                |
| Pólizas entrando en cobro al segundo aniversario o antes  | 1,929   | 25                |                |
| Pólizas no en vigor al fin del periodo de gracia  | 459     |                   | 6              |
| AL SEGUNDO ANIVERSARIO EN 2000 Y EN COBRO AL PRIMERO  |         |                   |                |
| Pólizas continuando en cobro al segundo aniversario   | 99      | 1                 |                |

| Análisis de Caducidad o Persistencia  |         |                   |                |
|---|---------|-------------------|----------------|
| Pólizas Emitidas en: 1999<br>Pólizas Colocadas:<br>Pólizas No Colocadas:<br>Total de Pólizas Emitidas | Pólizas | Indicadores       |                |
|   |         | %<br>Persistencia | %<br>Caducidad |
| AL PRIMER ANIVERSARIO EN 2000   |         |                   |                |
| Pólizas pagando primas antes del fin del periodo de gracia  | 5,906   | 64                |                |
| Pólizas entrando en cobro al primer aniversario o antes   | 2,403   | 26                |                |
| Pólizas no en vigor al fin del periodo de gracia  | 887     |                   | 10             |

## Plan T55S (Forma de Pago Mensual)

| Análisis de Caducidad o Persistencia  |         |                   |                |
|---|---------|-------------------|----------------|
| Pólizas Emitidas en: 1996<br>Pólizas Colocadas:<br>Pólizas No Colocadas:<br>Total de Pólizas Emitidas | Pólizas | Indicadores       |                |
|   |         | %<br>Persistencia | %<br>Caducidad |
| <b>AL PRIMER ANIVERSARIO EN 1997</b>  |         |                   |                |
| Pólizas pagando primas antes del fin del período de gracia  | 257     | 64                |                |
| Pólizas entrando en cobro al primer aniversario o antes   | 33      | 8                 |                |
| Pólizas no en vigor al fin del período de gracia  | 112     |                   | 28             |
| <b>AL SEGUNDO ANIVERSARIO EN 1998 PAGANDO PRIMAS AL PRIMERO</b>                                       |         |                   |                |
| Pólizas pagando primas antes del fin del período de gracia  | 127     | 44                |                |
| Pólizas entrando en cobro al segundo aniversario o antes  | 73      | 25                |                |
| Pólizas no en vigor al fin del período de gracia  | 57      |                   | 20             |
| <b>AL SEGUNDO ANIVERSARIO EN 1998 Y EN COBRO AL PRIMERO</b>   |         |                   |                |
| Pólizas continuando en cobro al segundo aniversario   | 33      | 11                |                |
| <b>AL TERCER ANIVERSARIO EN 1999 PAGANDO PRIMAS AL SEGUNDO</b>  |         |                   |                |
| Pólizas pagando primas antes del fin del período de gracia  | 87      | 37                |                |
| Pólizas no en vigor al fin del período de gracia  | 40      |                   | 17             |
| <b>AL TERCER ANIVERSARIO EN 1999 Y EN COBRO AL SEGUNDO</b>  |         |                   |                |
| Pólizas continuando en cobro al tercer aniversario  | 106     | 46                |                |
| <b>AL CUARTO ANIVERSARIO EN 2000 PAGANDO PRIMAS AL TERCERO</b>  |         |                   |                |
| Pólizas pagando primas antes del fin del período de gracia  | 54      | 28                |                |
| Pólizas entrando en cobro al cuarto aniversario o antes   | 23      | 12                |                |
| Pólizas no en vigor al fin del período de gracia  | 10      |                   | 5              |
| <b>AL CUARTO ANIVERSARIO EN 2000 Y EN COBRO AL TERCERO</b>  |         |                   |                |
| Pólizas continuando en cobro al tercer aniversario  | 106     | 55                |                |

| Análisis de Caducidad o Persistencia  |         |                   |                |
|---|---------|-------------------|----------------|
| Pólizas Emitidas en: 1997<br>Pólizas Colocadas:<br>Pólizas No Colocadas:<br>Total de Pólizas Emitidas | Pólizas | Indicadores       |                |
|   |         | %<br>Persistencia | %<br>Caducidad |
| <b>AL PRIMER ANIVERSARIO EN 1998</b>  |         |                   |                |
| Pólizas pagando primas antes del fin del período de gracia  | 1,380   | 57                |                |
| Pólizas entrando en cobro al primer aniversario o antes   | 530     | 22                |                |
| Pólizas no en vigor al fin del período de gracia  | 517     |                   | 21             |
| <b>AL SEGUNDO ANIVERSARIO EN 1999 PAGANDO PRIMAS AL PRIMERO</b>                                       |         |                   |                |
| Pólizas pagando primas antes del fin del período de gracia  | 943     | 49                |                |
| Pólizas entrando en cobro al segundo aniversario o antes  | 340     | 18                |                |
| Pólizas no en vigor al fin del período de gracia  | 97      |                   | 5              |
| <b>AL SEGUNDO ANIVERSARIO EN 1999 Y EN COBRO AL PRIMERO</b>   |         |                   |                |
| Pólizas continuando en cobro al segundo aniversario   | 530     | 28                |                |
| <b>AL TERCER ANIVERSARIO EN 2000 PAGANDO PRIMAS AL SEGUNDO</b>  |         |                   |                |
| Pólizas pagando primas antes del fin del período de gracia  | 578     | 32                |                |
| Pólizas entrando en cobro al tercer aniversario o antes   | 352     | 19                |                |
| Pólizas no en vigor al fin del período de gracia  | 13      |                   | 1              |
| <b>AL TERCER ANIVERSARIO EN 2000 Y EN COBRO AL SEGUNDO</b>  |         |                   |                |
| Pólizas continuando en cobro al segundo aniversario   | 867     | 48                |                |
| Pólizas no en vigor al fin del período de gracia  | 3       |                   | 0              |

| <b>Análisis de Caducidad o Persistencia</b>                     |         |                   |                |
|---|---------|-------------------|----------------|
| Pólizas Emitidas en: 1998                                       | Pólizas | Indicadores       |                |
|   |         | %<br>Persistencia | %<br>Caducidad |
| Pólizas Colocadas:  | 1,995   |                   |                |
| Pólizas No Colocadas:   | 196     |                   |                |
| Total de Pólizas Emitidas                                       | 2,191   |                   |                |
| <b>AL PRIMER ANIVERSARIO EN 1999</b>                            |         |                   |                |
| Pólizas pagando primas antes del fin del período de gracia      | 844     | 42                |                |
| Pólizas entrando en cobro al primer aniversario o antes         | 557     | 28                |                |
| Pólizas no en vigor al fin del período de gracia                | 594     |                   | 30             |
| <b>AL SEGUNDO ANIVERSARIO EN 2000 PAGANDO PRIMAS AL PRIMERO</b> |         |                   |                |
| Pólizas pagando primas antes del fin del período de gracia      | 627     | 45                |                |
| Pólizas entrando en cobro al segundo aniversario o antes        | 182     | 13                |                |
| Pólizas no en vigor al fin del período de gracia                | 35      |                   | 2              |
| <b>AL SEGUNDO ANIVERSARIO EN 2000 Y EN COBRO AL PRIMERO</b>     |         |                   |                |
| Pólizas continuando en cobro al segundo aniversario             | 557     | 40                |                |

| <b>Análisis de Caducidad o Persistencia</b>                |         |                   |                |
|--|---------|-------------------|----------------|
| Pólizas Emitidas en: 1999                                  | Pólizas | Indicadores       |                |
|  |         | %<br>Persistencia | %<br>Caducidad |
| Pólizas Colocadas:   | 2,323   |                   |                |
| Pólizas No Colocadas:                                      | 422     |                   |                |
| Total de Pólizas Emitidas                                  | 2,745   |                   |                |
| <b>AL PRIMER ANIVERSARIO EN 2000</b>                       |         |                   |                |
| Pólizas pagando primas antes del fin del período de gracia | 1,106   | 48                |                |
| Pólizas entrando en cobro al primer aniversario o antes    | 959     | 41                |                |
| Pólizas no en vigor al fin del período de gracia           | 258     |                   | 11             |

## **ANEXO 4**

**Análisis de tiempos para el Área de Emisión  
1999**

Empleados del Área al 31/12/98: \_\_\_\_\_  
Empleados del Área al 31/12/99: \_\_\_\_\_  
Superficie Aproximada: \_\_\_\_\_

Tiempo utilizado aproximado

Descuento por Nómina

Otros Productos

Total

| <b>Ventas:</b>   |   |   |   |
|--|---|---|---|
| Promociones: concursos, campañas, boletines, etc.            | % | % | % |
| Literatura promocional y materiales de venta al público      | % | % | % |
| Preparación de propuestas a agentes                          | % | % | % |
| Reportes de Producción                                       | % | % | % |
| Otros:   | % | % | % |
| <b>Emisión:</b>  |   |   |   |
| Cálculo de Primas en emisión                                 | % | % | % |
| Captura de información para estudio en emisión               | % | % | % |
| Preparación de pólizas y archivos relacionados               | % | % | % |
| Cambios en pólizas de primer año                             | % | % | % |
| CANCELACIONES DE PAGO DE PRIMA                               | % | % | % |
| <b>Suscripción:</b>  |   |   |   |
| Exámenes Médicos   | % | % | % |
| Actividades de Selección de riesgos                          | % | % | % |
| Revisión de solicitudes                                      | % | % | % |
| Revisión y aprobación de informes médicos                    | % | % | % |
| Revisión y aplicación de manuales de suscripción             | % | % | % |
| Otros:   | % | % | % |
| <b>Total Gastos de Adquisición</b>                           |   |   |   |
| <b>Ventas: tradicional, agencia, desarrollo</b>              |   |   |   |
| Capacitación a agentes                                       | % | % | % |
| Nómina de agentes  | % | % | % |
| Administración de actividades de agentes                     | % | % | % |
| Contratación de agentes                                      | % | % | % |
| Convenciones y seminarios de agentes                         | % | % | % |
| Otros:   | % | % | % |
| Emisión  | % | % | % |
| Cambios de pólizas de renovación                             | % | % | % |
| Recopilación de primas, emisión de recibos                   | % | % | % |
| Calcular y pagar comisiones de agentes                       | % | % | % |
| CANCELACIONES VENCIMIENTOS RETIROS Y RESCATES                | % | % | % |
| Rehabilitaciones   | % | % | % |
| Simestros  | % | % | % |
| Dovales Vencidos   | % | % | % |
| Otros:   | % | % | % |
| <b>Total Gastos de Mantenimiento</b>                         |   |   |   |
| <b>Sistemas y programación, excluyendo conversión LSP</b>    |   |   |   |
| Investigación y desarrollo, incluyendo conversión LSP        | % | % | % |
| Análisis de mercado, competencia, etc.                       | % | % | % |
| Análisis de siniestralidad, persistencia, conservación, etc. | % | % | % |
| Desarrollo de productos nuevos                               | % | % | % |
| Cálculo de Reservas, estadísticas                            | % | % | % |
| Reaseguro  | % | % | % |
| Legal  | % | % | % |
| Mantenimiento de archivos generales                          | % | % | % |
| Almacenamiento de Información                                | % | % | % |
| Otros:   | % | % | % |
| <b>Total Gastos de Mantenimiento General</b>                 |   |   |   |
| <b>Dirección General</b>                                     |   |   |   |
| Comunicaciones y relaciones públicas                         | % | % | % |
| Publicidad   | % | % | % |
| Recursos Humanos   | % | % | % |
| Finanzas   | % | % | % |
| Contabilidad   | % | % | % |
| Auditoría  | % | % | % |
| Inversiones  | % | % | % |
| Otros:   | % | % | % |
| <b>Total Gastos Generales</b>                                |   |   |   |

**Porcentajes de distribución de gastos.**

|  | <b>Adquisición</b> | <b>Mantenimiento</b> | <b>Generales</b> | <b>Diferibles</b> | <b>No Diferibles</b> |
|--|--------------------|----------------------|------------------|-------------------|----------------------|
| <b>Ventas:</b>   |                    |                      |                  |                   |                      |
| Promociones: Concursos, campañas, boletines, etc...            | 33%                | 87%                  | 0%               | 75%               | 25%                  |
| Literatura Promocional y materiales de venta al público        | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Preparación de propuestas a agentes                            | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Reportes de Producción   | 0%                 | 100%                 | 0%               | 0%                | 100%                 |
| Otros  | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| <b>Emisión:</b>  |                    |                      |                  |                   |                      |
| Calculo de Primas en emisión                                   | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Preparación de pólizas y archivos relacionados                 | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Captura de información para estudio en emisión                 | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Cambios en pólizas de primer año                               | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Cancelación sin pago de prima                                  | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Reportes de Prima y Comisiones Iniciales                       | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Gastos de formas de impresión de Pólizas                       | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Correo   | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| <b>Suscripción:</b>  |                    |                      |                  |                   |                      |
| Exámenes Médicos   | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Actividades de selección de riesgos                            | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Revisión y aplicación de manuales de suscripción               | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Revisión y aprobación de informes médicos                      | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Revisión de solicitudes  | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Honorarios de Información Médica                               | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Honorarios de Reportes de Inspección y Exámenes Médicos        | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| Gastos de Impresión de Aplicación                              | 100%               | 0%                   | 0%               | 75%               | 25%                  |
| <b>Supervisión de Agentes</b>                                  |                    |                      |                  |                   |                      |
| Comisiones de Gerentes   | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Capacitación a Agentes   | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Compensaciones o Incentivos que Incluyen Premios y Bonos       | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Compensaciones a Gerentes Generales y de Ventas                | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Premios de Contratación  | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Baja de Agentes  | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| <b>TOTAL NUEVO NEGOCIO</b>                                     |                    |                      |                  |                   |                      |
| Cobranza y Facturación de Primas                               | 0%                 | 100%                 | 0%               | 0%                | 100%                 |
| Proceso de Cambios en Pólizas                                  | 0%                 | 100%                 | 0%               | 0%                | 100%                 |
| Proceso de Compensación de Agentes                             | 0%                 | 100%                 | 0%               | 0%                | 100%                 |
| Proceso de Retiros y Rescatos                                  | 0%                 | 100%                 | 0%               | 0%                | 100%                 |
| Proceso de Rehabilitaciones                                    | 0%                 | 100%                 | 0%               | 0%                | 100%                 |
| Proceso de Dividendos  | 0%                 | 100%                 | 0%               | 0%                | 100%                 |
| Proceso de Beneficios por Muerto                               | 0%                 | 100%                 | 0%               | 0%                | 100%                 |
| Proceso de Vencimientos  | 0%                 | 100%                 | 0%               | 0%                | 100%                 |
| Correo   | 0%                 | 100%                 | 0%               | 0%                | 100%                 |
| <b>Supervisión de Agentes</b>                                  |                    |                      |                  |                   |                      |
| Capacitación de Agentes  | 0%                 | 50%                  | 50%              | 0%                | 100%                 |
| Supervisión de Oficina Central                                 | 0%                 | 50%                  | 50%              | 0%                | 100%                 |
| Supervisión Regional   | 0%                 | 50%                  | 50%              | 0%                | 100%                 |
| Capacitación para Desarrollo Profesional                       | 0%                 | 87%                  | 33%              | 0%                | 100%                 |
| Administración de Agentes, Planes de Financiamiento            | 33%                | 33%                  | 33%              | 0%                | 100%                 |
| Gastos de Convenciones y Seminarios (No req. Prod.)            | 33%                | 87%                  | 0%               | 0%                | 100%                 |
| Materiales de Capacitación y ayuda para ventas                 | 0%                 | 50%                  | 50%              | 0%                | 100%                 |
| Honorarios Legales para Actividades del Agente                 | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| <b>TOTAL MANTENIMIENTO</b>                                     |                    |                      |                  |                   |                      |
| Sistemas y Programación  | 0%                 | 50%                  | 50%              | 0%                | 100%                 |
| Investigación y Desarrollo                                     | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Estudios de Competencia  | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Estudios de Conservación                                       | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Valuación de Pólizas   | 0%                 | 100%                 | 0%               | 0%                | 100%                 |
| Reaseguro  | 0%                 | 100%                 | 0%               | 0%                | 100%                 |
| Desarrollo de Requisitos de Suscripción                        | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Trabajo Legal  | 0%                 | 50%                  | 50%              | 0%                | 100%                 |
| Mantenimiento de Archivos                                      | 0%                 | 100%                 | 0%               | 0%                | 100%                 |
| Gtos. de impresión para tasas de Inversión, Proy. de Div. .... | 0%                 | 25%                  | 75%              | 0%                | 100%                 |
| <b>TOTAL MANTENIMIENTO GENERAL</b>                             |                    |                      |                  |                   |                      |
| <b>Generales</b>   |                    |                      |                  |                   |                      |
| Oficina Ejecutiva  | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Comunicación Corporativa                                       | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Gastos de Publicidad   | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Recursos Humanos   | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Finanzas Corporativas  | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Contabilidad   | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Auditoría Interna  | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Inversiones  | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Desarrollo de Productos  | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| Costos Externos, tales como auditoría, etc.                    | 0%                 | 0%                   | 100%             | 0%                | 100%                 |
| <b>TOTAL GASTOS GENERALES</b>                                  |                    |                      |                  |                   |                      |



## **ANEXO 5**

Segment Statistics Report  
Project: TOTAL Segment: Corporate

Starting: 1/1/2000 for 20 years

| Calendar Year                 | Initial | 2000     | 2001     | 2002     | 2003     | 2004     | 2005     | 2006     | 2007     | 2008     | 2009     |
|-------------------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Face Amount Inforce.          | 9,899M  | 8,578M   | 7,886M   | 7,435M   | 7,132M   | 6,485M   | 6,282M   | 6,087M   | 5,897M   | 5,713M   | 5,536M   |
| Cash Value .....              | 6,369K  | 13,112K  | 21,685K  | 26,815K  | 31,358K  | 35,099K  | 38,023K  | 40,111K  | 41,336K  | 41,674K  | 41,099K  |
| Policyholder Loans .          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Loans Lost on Surre.          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Loans Lost on Other.          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Accum Dividends ....          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>POLICY COUNTS:</b>         |         |          |          |          |          |          |          |          |          |          |          |
| In Force BOP .....            | 46,632  | 40,057   | 36,262   | 33,861   | 32,137   | 29,972   | 28,793   | 27,660   | 26,570   | 25,521   | 25,521   |
| New Issues .....              | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Deaths .....                  | 95      | 102      | 109      | 114      | 117      | 119      | 123      | 127      | 131      | 135      | 135      |
| Surrenders .....              | 6,480   | 3,568    | 2,006    | 1,215    | 1,111    | 1,060    | 1,010    | 963      | 918      | 875      | 875      |
| Lapses .....                  | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Conversions .....             | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Maturities .....              | 0       | 125      | 286      | 396      | 937      | 0        | 0        | 0        | 0        | 0        | 0        |
| In Force EOP .....            | 40,057  | 36,262   | 33,861   | 32,137   | 29,972   | 28,793   | 27,660   | 26,570   | 25,521   | 24,511   | 24,511   |
| <b>FACE AMOUNT:</b>           |         |          |          |          |          |          |          |          |          |          |          |
| In Force BOP .....            | 9,899M  | 8,578M   | 7,886M   | 7,435M   | 7,132M   | 6,485M   | 6,282M   | 6,087M   | 5,897M   | 5,713M   | 5,536M   |
| New Issues .....              | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Increases/Decreases.          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Deaths .....                  | 11,534K | 12,026K  | 12,942K  | 13,774K  | 13,921K  | 14,088K  | 14,609K  | 15,201K  | 15,886K  | 16,606K  | 16,606K  |
| Surrenders .....              | 1,310M  | 641,275K | 339,144K | 226,845K | 195,964K | 188,465K | 181,266K | 174,353K | 167,710K | 161,322K | 161,322K |
| Lapses .....                  | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Conversions .....             | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Maturities .....              | 0       | 37,833K  | 98,902K  | 62,351K  | 437,494K | 0        | 0        | 0        | 0        | 0        | 0        |
| In Force EOP .....            | 8,578M  | 7,886M   | 7,435M   | 7,132M   | 6,485M   | 6,282M   | 6,087M   | 5,897M   | 5,713M   | 5,536M   | 5,536M   |
| <b>AI RIDER INFORMATION:</b>  |         |          |          |          |          |          |          |          |          |          |          |
| Face Amount Inforce.          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Death Claims .....            | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Premiums .....                | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>LIABILITY AMOUNTS:</b>     |         |          |          |          |          |          |          |          |          |          |          |
| Required Surplus ...          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Statutory Reserves .          | 26,502K | 36,403K  | 45,212K  | 53,327K  | 60,680K  | 66,368K  | 71,343K  | 74,996K  | 77,286K  | 78,171K  | 77,603K  |
| Stat Reins Reserves .         | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Term Conv Reserves .          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Deficiency Reserves .         | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| TOTAL STAT RESERVE:           | 26,502K | 36,403K  | 45,212K  | 53,327K  | 60,680K  | 66,368K  | 71,343K  | 74,996K  | 77,286K  | 78,171K  | 77,603K  |
| Tax Reserves .....            | 6,369K  | 13,112K  | 21,685K  | 26,815K  | 31,358K  | 35,099K  | 38,023K  | 40,111K  | 41,336K  | 41,674K  | 41,099K  |
| Tax Reins Reserves .          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| TOTAL TAX RESERVE:            | 6,369K  | 13,112K  | 21,685K  | 26,815K  | 31,358K  | 35,099K  | 38,023K  | 40,111K  | 41,336K  | 41,674K  | 41,099K  |
| <b>CHANGE IN LIABILITIES:</b> |         |          |          |          |          |          |          |          |          |          |          |
| Inc Stat Reserves ..          | 9,900K  | 8,809K   | 8,116K   | 7,353K   | 5,688K   | 4,975K   | 3,653K   | 2,290K   | 885,360  | -568,345 | -568,345 |
| Inc Tax Reserves ...          | 6,743K  | 8,573K   | 5,130K   | 4,543K   | 3,742K   | 2,924K   | 2,088K   | 1,225K   | 338,630  | -575,283 | -575,283 |
| Inc Required Surplus          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |

NOTE: "K" indicates thousands; "M" indicates millions; "B" indicates billions.

## Segment Statistics Report

Starting: 1/1/2000 for 20 years

Project: TOTAL Segment: Corporate

| Calendar Year              | Initial | 2000    | 2001    | 2002    | 2003    | 2004    | 2005    | 2006    | 2007    | 2008    | 2009    |
|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>PUA ANALYSIS:</b>       |         |         |         |         |         |         |         |         |         |         |         |
| Face Amount .....          | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| Face Amount Issued ..      | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| Face Amount Surr ...       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| Statutory Reserve ..       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| Increase in Reserve ..     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| Tax Reserve .....          | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| Claims Paid on Death ..    | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| Surrender Benefits ..      | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| P/H Dividends .....        | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| Inc in P/H Div Liab.       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| <b>GAAP STATISTICS:</b>    |         |         |         |         |         |         |         |         |         |         |         |
| Unamort DAC (Comm) ..      | 36,282K | 40,941K | 43,338K | 44,571K | 44,347K | 42,685K | 40,686K | 38,326K | 35,619K | 32,634K | 29,498K |
| Unamort DAC (HComm) ..     | 6,687K  | 6,404K  | 6,161K  | 5,920K  | 5,663K  | 5,415K  | 5,129K  | 4,801K  | 4,434K  | 4,039K  | 3,629K  |
| Unamort DAC (Macro) ..     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| Total DAC:                 | 42,969K | 47,345K | 49,499K | 50,492K | 50,010K | 48,101K | 45,815K | 43,127K | 40,053K | 36,673K | 33,127K |
| GAAP reserves .....        | 42,994K | 50,876K | 58,177K | 64,723K | 70,601K | 75,300K | 79,420K | 82,288K | 83,753K | 83,736K | 82,300K |
| <b>SEGMENT EXPENSES:</b>   |         |         |         |         |         |         |         |         |         |         |         |
| Non-deferrable .....       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| Deferrable .....           | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| <b>SEGMENT PARAMETERS:</b> |         |         |         |         |         |         |         |         |         |         |         |
| Portfolio Rate .....       | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  |
| Discount Rate .....        | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  |
| Inflation Rate .....       | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| Gain From Oper Tax ..      | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| Diff Earnings Rate ..      | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| Mortality Rt Factor ..     | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  |
| Lapse Rate Factor ..       | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  |

NOTE: "K" indicates thousands; "M" indicates millions; "B" indicates billions.

Segment Statistics Report

Starting: 1/1/2000 for 20 years

Project: TOTAL Segment: Corporate

| Calendar Year                 | Initial | 2010     | 2011     | 2012     | 2013     | 2014     | 2015     | 2016     | 2017     | 2018    | 2019   |
|-------------------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|---------|--------|
| Face Amount Inforce.          | 5,536M  | 5,363M   | 5,196M   | 5,033M   | 4,876M   | 4,722M   | 4,573M   | 4,234M   | 3,143M   | 1,646M  | 0      |
| Cash Value .....              | 41,099K | 39,571K  | 37,057K  | 33,519K  | 28,921K  | 23,219K  | 16,364K  | 9,184K   | 3,296K   | 0       | 0      |
| Policyholder Loans .          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Loans Lost on Surre.          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Loans Lost on Other.          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Accum Dividends ....          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| <b>POLICY COUNTS:</b>         |         |          |          |          |          |          |          |          |          |         |        |
| In Force BOP .....            |         | 24,511   | 23,538   | 22,601   | 21,698   | 20,827   | 19,987   | 19,176   | 17,465   | 12,635  | 6,162  |
| New Issues .....              |         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Deaths .....                  |         | 139      | 143      | 147      | 151      | 155      | 159      | 156      | 131      | 83      | 27     |
| Surrenders .....              |         | 834      | 794      | 756      | 720      | 685      | 652      | 571      | 404      | 192     | 0      |
| Lapses .....                  |         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Conversions .....             |         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Maturities .....              |         | 0        | 0        | 0        | 0        | 0        | 0        | 984      | 4,295    | 6,198   | 6,135  |
| In Force EOP .....            |         | 23,538   | 22,601   | 21,698   | 20,827   | 19,987   | 19,176   | 17,465   | 12,635   | 6,162   | 0      |
| <b>FACE AMOUNT:</b>           |         |          |          |          |          |          |          |          |          |         |        |
| In Force BOP .....            |         | 5,536M   | 5,363M   | 5,196M   | 5,033M   | 4,876M   | 4,722M   | 4,573M   | 4,234M   | 3,143M  | 1,646M |
| New Issues .....              |         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Increases/Decreases.          |         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Deaths .....                  |         | 17,318K  | 18,046K  | 18,825K  | 19,659K  | 20,540K  | 21,442K  | 21,341K  | 18,371K  | 12,202K | 4,224K |
| Surrenders .....              |         | 155,178K | 149,266K | 143,576K | 138,094K | 132,812K | 127,718K | 112,513K | 80,399K  | 41,436K | 0      |
| Lapses .....                  |         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Conversions .....             |         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Maturities .....              |         | 0        | 0        | 0        | 0        | 0        | 0        | 205,645K | 991,558K | 1,444M  | 1,641M |
| In Force EOP .....            |         | 5,363M   | 5,196M   | 5,033M   | 4,876M   | 4,722M   | 4,573M   | 4,234M   | 3,143M   | 1,646M  | 0      |
| <b>AI RIDER INFORMATION:</b>  |         |          |          |          |          |          |          |          |          |         |        |
| Face Amount Inforce.          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Death Claims .....            |         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Premiums .....                |         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| <b>LIABILITY AMOUNTS:</b>     |         |          |          |          |          |          |          |          |          |         |        |
| Required Surplus ...          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Statutory Reserves .          | 77,603K | 75,527K  | 71,888K  | 66,624K  | 59,670K  | 50,948K  | 40,378K  | 28,086K  | 15,474K  | 5,391K  | 0      |
| Stat Reins Reserves.          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Term Conv Reserves .          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| Deficiency Reserves.          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| TOTAL STAT RESERVE:           | 77,603K | 75,527K  | 71,888K  | 66,624K  | 59,670K  | 50,948K  | 40,378K  | 28,086K  | 15,474K  | 5,391K  | 0      |
| Tax Reserves .....            | 41,099K | 39,571K  | 37,057K  | 33,519K  | 28,921K  | 23,219K  | 16,364K  | 9,184K   | 3,296K   | 0       | 0      |
| Tax Reins Reserves .          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |
| TOTAL TAX RESERVE:            | 41,099K | 39,571K  | 37,057K  | 33,519K  | 28,921K  | 23,219K  | 16,364K  | 9,184K   | 3,296K   | 0       | 0      |
| <b>CHANGE IN LIABILITIES:</b> |         |          |          |          |          |          |          |          |          |         |        |
| Inc Stat Reserves ..          | -2,077K | -3,635K  | -5,263K  | -6,955K  | -8,722K  | -10,570K | -12,292K | -12,612K | -10,083K | -5,391K | 0      |
| Inc Tax Reserves ...          | -1,528K | -2,514K  | -3,539K  | -4,597K  | -5,703K  | -6,855K  | -7,180K  | -5,888K  | -3,296K  | 0       | 0      |
| Inc Required Surplus          | 0       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 0      |

NOTE: "K" indicates thousands; "M" indicates millions; "B" indicates billions.

Segment Statistics Report

Starting: 1/1/2000 for 20 years

Project: TOTAL Segment: Corporate

| Calendar Year              | Initial | 2010    | 2011    | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    | 2018   | 2019   |
|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--------|
| <b>PUA ANALYSIS:</b>       |         |         |         |         |         |         |         |         |         |        |        |
| Face Amount .....          | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      | 0      |
| Face Amount Issued .       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      | 0      |
| Face Amount Surr ...       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      | 0      |
| Statutory Reserve ..       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      | 0      |
| Increase in Reserve.       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      | 0      |
| Tax Reserve .....          | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      | 0      |
| Claims Paid on Death       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      | 0      |
| Surrender Benefits .       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      | 0      |
| P/H Dividends .....        | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      | 0      |
| Inc in P/H Div Liab.       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      | 0      |
| <b>GAAP STATISTICS:</b>    |         |         |         |         |         |         |         |         |         |        |        |
| Unamort DAC (Com) .        | 29,498K | 26,280K | 22,965K | 19,538K | 15,981K | 12,276K | 8,405K  | 4,602K  | 1,615K  | 0      | 0      |
| Unamort DAC (NCom).        | 3,629K  | 3,214K  | 2,791K  | 2,359K  | 1,915K  | 1,457K  | 982,531 | 523,577 | 175,923 | 0      | 0      |
| Unamort DAC (Macro).       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      | 0      |
| Total DAC:                 | 33,127K | 29,494K | 25,756K | 21,896K | 17,895K | 13,733K | 9,388K  | 5,125K  | 1,791K  | 0      | 0      |
| GAAP reserves .....        | 82,300K | 79,535K | 75,413K | 69,777K | 62,470K | 53,326K | 42,187K | 29,266K | 15,993K | 5,428K | 0      |
| <b>SEGMENT EXPENSES:</b>   |         |         |         |         |         |         |         |         |         |        |        |
| Non-deferrable .....       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      | 0      |
| Deferrable .....           | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      | 0      |
| <b>SEGMENT PARAMETERS:</b> |         |         |         |         |         |         |         |         |         |        |        |
| Portfolio Rate .....       | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25% | 10.25% |
| Discount Rate .....        | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25%  | 10.25% | 10.25% |
| Inflation Rate .....       | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%  | 0.00%  |
| Gain From Oper Tax .       | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%  | 0.00%  |
| Diff Earnings Rate .       | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%  | 0.00%  |
| Mortality Rt Factor.       | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000 | 1.0000 |
| Lapse Rate Factor ..       | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000 | 1.0000 |

NOTE: "K" indicates thousands; "M" indicates millions; "B" indicates billions.

Statutory Income Statement  
 Project: TOTAL Segment: Corporate

Starting: 1/1/2000 for 20 years

|                    | Present Value | % PV Prem | IRR    | % PV Prem       |        | Break Even Year.   |             |
|--------------------|---------------|-----------|--------|-----------------|--------|--------------------|-------------|
| Cash Flow .....    | 38,042,012.39 | 16.48%    | -2.70% | Commissions ... | 8.76%  |                    | 1           |
| Stat Book Profits. | 64,544,313.64 | 27.96%    | n/a    | Total Claims .. | 56.07% | Surplus Ratio ..   | n/a         |
| Capital Transfers. | 0.00          | n/a       | n/a    | Other Expenses. | 15.00% | FV Premium .       | 230,840,139 |
| Statutory Profit . | 64,544,313.64 | 27.96%    | n/a    |                 |        | Gen Prof Rel ROI . | -180.88%    |
|                    |               |           |        |                 |        | Initial CX .       | 0.00        |

| Calendar Year                | 2000             | 2001             | 2002             | 2003             | 2004           | 2005           | 2006           | 2007           | 2008           | 2009            |
|------------------------------|------------------|------------------|------------------|------------------|----------------|----------------|----------------|----------------|----------------|-----------------|
| <b>REVENUE:</b>              |                  |                  |                  |                  |                |                |                |                |                |                 |
| Premium Income .....         | 36,388K          | 33,334K          | 31,433K          | 30,157K          | 27,875K        | 26,888K        | 25,935K        | 25,014K        | 24,124K        | 23,263K         |
| Inc Gross DU Prem ..         | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| Dividends On Deposit         | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| Reins Allowances ...         | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| Investment Income ...        | 3,269,073        | 4,645,105        | 6,113,943        | 7,638,065        | 9,268,162      | 10,996K        | 12,768K        | 14,580K        | 16,434K        | 18,329K         |
| Accru Int/Pol Loans.         | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| Miscellaneous .....          | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| <b>TOTAL REVENUE:</b>        | <b>39,657K</b>   | <b>37,980K</b>   | <b>37,547K</b>   | <b>37,795K</b>   | <b>37,143K</b> | <b>37,884K</b> | <b>38,702K</b> | <b>39,594K</b> | <b>40,558K</b> | <b>41,593K</b>  |
| <b>EXPENSES:</b>             |                  |                  |                  |                  |                |                |                |                |                |                 |
| Death Benefits .....         | 11,534K          | 12,026K          | 12,942K          | 13,774K          | 13,921K        | 14,088K        | 14,609K        | 15,201K        | 15,896K        | 16,606K         |
| Maturity Benefits ..         | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| Surrender Benefits .         | 519,574          | 722,550          | 974,008          | 952,788          | 1,097,262      | 1,212,018      | 1,297,061      | 1,352,394      | 1,377,779      | 1,373,112       |
| Lapse Benefits .....         | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| Withdrawals .....            | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| Increase in Reserves         | 9,900,415        | 8,809,030        | 8,115,629        | 7,352,568        | 5,688,004      | 4,975,178      | 3,652,942      | 2,289,980      | 885,360        | -568,345        |
| Increase PH Div Accm         | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| Commissions .....            | 8,806,076        | 5,447,658        | 3,811,936        | 2,272,564        | 648,473        | 612,294        | 577,840        | 545,033        | 513,787        | 484,025         |
| Other Expenses .....         | 5,458,156        | 5,000,171        | 4,714,915        | 4,523,596        | 4,181,299      | 4,033,176      | 3,890,178      | 3,752,074      | 3,618,586      | 3,489,474       |
| Inc in Loading .....         | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| P/H Dividends .....          | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| Increase PH Div Liab         | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| <b>TOTAL EXPENSES:</b>       | <b>36,218K</b>   | <b>32,005K</b>   | <b>30,558K</b>   | <b>28,876K</b>   | <b>25,536K</b> | <b>24,921K</b> | <b>24,027K</b> | <b>23,140K</b> | <b>22,281K</b> | <b>21,384K</b>  |
| <b>GAIN FROM OPERATIONS:</b> |                  |                  |                  |                  |                |                |                |                |                |                 |
| Pre-tax Gain .....           | 3,438,698        | 5,974,362        | 6,988,605        | 8,919,384        | 11,607K        | 12,963K        | 14,675K        | 16,454K        | 18,276K        | 20,208K         |
| Tax on Gain .....            | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| Tax on Surplus .....         | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| Increase in Tax Liab         | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| <b>NET GAIN/OPERATIONS:</b>  | <b>3,438,698</b> | <b>5,974,362</b> | <b>6,988,605</b> | <b>8,919,384</b> | <b>11,607K</b> | <b>12,963K</b> | <b>14,675K</b> | <b>16,454K</b> | <b>18,276K</b> | <b>20,208K</b>  |
| <b>SURPLUS ACCOUNT:</b>      |                  |                  |                  |                  |                |                |                |                |                |                 |
| Starting Stat Surp .         | 0                | 3,438,698        | 9,413,060        | 16,402K          | 25,321K        | 36,928K        | 49,891K        | 64,566K        | 81,020K        | 99,297K         |
| Net Gain/Operations.         | 3,438,698        | 5,974,362        | 6,988,605        | 8,919,384        | 11,607K        | 12,963K        | 14,675K        | 16,454K        | 18,276K        | 20,208K         |
| Capital Transfer ...         | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| Change in Surplus ..         | 3,438,698        | 5,974,362        | 6,988,605        | 8,919,384        | 11,607K        | 12,963K        | 14,675K        | 16,454K        | 18,276K        | 20,208K         |
| <b>ENDING SURPLUS:</b>       | <b>3,438,698</b> | <b>9,413,060</b> | <b>16,402K</b>   | <b>25,321K</b>   | <b>36,928K</b> | <b>49,891K</b> | <b>64,566K</b> | <b>81,020K</b> | <b>99,297K</b> | <b>119,505K</b> |
| Required Surplus .....       | 0                | 0                | 0                | 0                | 0              | 0              | 0              | 0              | 0              | 0               |
| Book Profit .....            | 3,438,698        | 5,621,895        | 6,023,767        | 7,238,213        | 9,012,008      | 9,177,631      | 9,561,168      | 9,836,141      | 9,971,755      | 10,030K         |
| Policies in Force .....      | 40,057           | 36,262           | 33,861           | 32,137           | 29,972         | 28,793         | 27,660         | 26,570         | 25,521         | 24,511          |

NOTE: \*K\* indicates thousands; \*M\* indicates millions; \*B\* indicates billions.

Statutory Income Statement  
Project: TOTAL Segment: Corporate

Starting: 1/1/2000 for 20 years

|                    | Present Value | % PV Prem | IRR    | % PV Prem       |        | Break Even Year.    |             |
|--------------------|---------------|-----------|--------|-----------------|--------|---------------------|-------------|
| Cash Flow .....    | 38,042,012.39 | 16.48%    | -2.70% | Commissions ... | 8.76%  |                     | 1           |
| Stat Book Profits. | 64,544,313.64 | 27.96%    | n/a    | Total Claims .. | 56.07% | Surplus Ratio ..    | n/a         |
| Capital Transfers. | 0.00          | n/a       | n/a    | Other Expenses. | 15.00% | PV Premium ..       | 230,840,139 |
| Statutory Profit . | 64,544,313.64 | 27.96%    | n/a    |                 |        | Gen Prof Rel ROI .. | -180.88%    |
|                    |               |           |        |                 |        | Initial CX ..       | 0.00        |

| Calendar Year                | 2010            | 2011            | 2012            | 2013            | 2014            | 2015            | 2016            | 2017             | 2018             | 2019            |
|------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|-----------------|
| <b>REVENUE:</b>              |                 |                 |                 |                 |                 |                 |                 |                  |                  |                 |
| Premium Income .....         | 22,430K         | 21,624K         | 20,843K         | 20,086K         | 19,352K         | 18,639K         | 16,878K         | 12,464K          | 6,415,218        | 0               |
| Inc Gross DJ Prem ..         | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| Dividends On Deposit         | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| Reins Allowances ...         | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| Investment Income ..         | 20,278K         | 22,289K         | 24,371K         | 26,531K         | 28,777K         | 31,113K         | 33,550K         | 36,115K          | 38,984K          | 42,363K         |
| Accru Int/Fol Loans.         | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| Miscellaneous .....          | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| <b>TOTAL REVENUE:</b>        | <b>42,708K</b>  | <b>43,912K</b>  | <b>45,214K</b>  | <b>46,617K</b>  | <b>48,129K</b>  | <b>49,758K</b>  | <b>50,428K</b>  | <b>48,579K</b>   | <b>45,400K</b>   | <b>42,363K</b>  |
| <b>EXPENSES:</b>             |                 |                 |                 |                 |                 |                 |                 |                  |                  |                 |
| Death Benefits .....         | 17,318K         | 18,046K         | 18,825K         | 19,659K         | 20,540K         | 21,442K         | 21,341K         | 18,371K          | 12,202K          | 4,223,736       |
| Maturity Benefits ..         | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| Surrender Benefits .         | 1,338,147       | 1,272,406       | 1,175,597       | 1,047,275       | 887,093         | 694,512         | 468,973         | 253,218          | 88,739           | 0               |
| Lapse Benefits .....         | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| Withdrawals .....            | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| Increase in Reserves         | -2,077K         | -3,639K         | -5,263K         | -6,955K         | -8,722K         | -10,570K        | -12,292K        | -12,612K         | -10,083K         | -5,391K         |
| Increase PH Div Acum         | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| Commissions .....            | 455,674         | 428,672         | 402,960         | 378,479         | 355,167         | 332,968         | 247,658         | 149,969          | 68,800           | 0               |
| Other Expenses .....         | 3,364,524       | 3,243,559       | 3,126,399       | 3,012,853       | 2,902,743       | 2,795,878       | 2,531,675       | 1,869,586        | 962,283          | 0               |
| Inc in Loading .....         | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| P/H Dividends .....          | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| Increase PH Div Liab         | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| <b>TOTAL EXPENSES:</b>       | <b>20,400K</b>  | <b>19,351K</b>  | <b>18,267K</b>  | <b>17,143K</b>  | <b>15,964K</b>  | <b>14,695K</b>  | <b>12,297K</b>  | <b>8,032,088</b> | <b>3,239,114</b> | <b>-1,167K</b>  |
| <b>GAIN FROM OPERATIONS:</b> |                 |                 |                 |                 |                 |                 |                 |                  |                  |                 |
| Pre-tax Gain .....           | 22,308K         | 24,561K         | 26,947K         | 29,473K         | 32,165K         | 35,064K         | 38,130K         | 40,547K          | 42,161K          | 43,531K         |
| Tax on Gain .....            | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| Tax on Surplus .....         | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| Increase in Tax Liab         | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| <b>NET GAIN/OPERATIONS:</b>  | <b>22,308K</b>  | <b>24,561K</b>  | <b>26,947K</b>  | <b>29,473K</b>  | <b>32,165K</b>  | <b>35,064K</b>  | <b>38,130K</b>  | <b>40,547K</b>   | <b>42,161K</b>   | <b>43,531K</b>  |
| <b>SURPLUS ACCOUNT:</b>      |                 |                 |                 |                 |                 |                 |                 |                  |                  |                 |
| Starting Stat Surp .         | 119,505K        | 141,813K        | 166,374K        | 193,321K        | 222,794K        | 254,959K        | 290,023K        | 328,153K         | 368,700K         | 410,861K        |
| Net Gain/Operations.         | 22,308K         | 24,561K         | 26,947K         | 29,473K         | 32,165K         | 35,064K         | 38,130K         | 40,547K          | 42,161K          | 43,531K         |
| Capital Transfer ...         | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| Change in Surplus ..         | 22,308K         | 24,561K         | 26,947K         | 29,473K         | 32,165K         | 35,064K         | 38,130K         | 40,547K          | 42,161K          | 43,531K         |
| <b>ENDING SURPLUS:</b>       | <b>141,813K</b> | <b>166,374K</b> | <b>193,321K</b> | <b>222,794K</b> | <b>254,959K</b> | <b>290,023K</b> | <b>328,153K</b> | <b>368,700K</b>  | <b>410,861K</b>  | <b>454,391K</b> |
| Required Surplus .....       | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0                | 0                | 0               |
| Book Profit .....            | 10,059K         | 10,025K         | 9,893,372       | 9,657,881       | 9,329,033       | 8,930,323       | 8,402,820       | 6,911,320        | 4,368,813        | 1,417,281       |
| Policies in Force .....      | 23,538          | 22,601          | 21,698          | 20,827          | 19,987          | 19,176          | 17,465          | 12,635           | 6,162            | 0               |

NOTE: "K" indicates thousands; "M" indicates millions; "B" indicates billions.

Projection Liability Cash Flows  
 Project: TOTAL Segment: Corporate

Starting: 1/1/2000 for 20 years

| Calendar Year               | 2000              | 2001              | 2002              | 2003              | 2004              | 2005              | 2006              | 2007              | 2008              | 2009              |
|-----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| <b>INCOME:</b>              |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
| First Year Premium          | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Exist Bus Ren Prem          | 36,387.70K        | 33,334.47K        | 31,432.76K        | 30,157.30K        | 27,875.33K        | 26,887.84K        | 25,934.52K        | 25,013.83K        | 24,123.90K        | 23,263.16K        |
| New Bus Renewal Prem        | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Single Premium              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Reins Prens Paid            | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Premium Refunds             | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| <b>TOTAL PREMIUM:</b>       | <b>36,387.70K</b> | <b>33,334.47K</b> | <b>31,432.76K</b> | <b>30,157.30K</b> | <b>27,875.33K</b> | <b>26,887.84K</b> | <b>25,934.52K</b> | <b>25,013.83K</b> | <b>24,123.90K</b> | <b>23,263.16K</b> |
| Dividends On Deposit        | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Reins Allowances            | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| <b>TOTAL INCOME:</b>        | <b>36,387.70K</b> | <b>33,334.47K</b> | <b>31,432.76K</b> | <b>30,157.30K</b> | <b>27,875.33K</b> | <b>26,887.84K</b> | <b>25,934.52K</b> | <b>25,013.83K</b> | <b>24,123.90K</b> | <b>23,263.16K</b> |
| <b>DISBURSEMENTS:</b>       |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
| Death Claims                | 11,533.86K        | 12,025.81K        | 12,941.61K        | 13,774.47K        | 13,921.03K        | 14,088.29K        | 14,609.45K        | 15,200.55K        | 15,885.71K        | 16,606.06K        |
| Maturities                  | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Health Claims               | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Reins Claims                | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Full Surrenders             | 519.57K           | 722.55K           | 974.01K           | 952.79K           | 1,097.26K         | 1,212.02K         | 1,297.06K         | 1,352.39K         | 1,377.78K         | 1,373.11K         |
| Nonforfeiture Lapses        | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Annuity Benefits            | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Net Policy Loans            | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Dividends                   | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Withdrawals                 | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| First Yr Commissions        | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Renewal Commissions         | 8,806.08K         | 5,447.66K         | 3,811.94K         | 2,272.56K         | 648.47K           | 612.29K           | 577.84K           | 545.03K           | 513.79K           | 484.03K           |
| <b>TOTAL COMMISSIONS:</b>   | <b>8,806.08K</b>  | <b>5,447.66K</b>  | <b>3,811.94K</b>  | <b>2,272.56K</b>  | <b>648.47K</b>    | <b>612.29K</b>    | <b>577.84K</b>    | <b>545.03K</b>    | <b>513.79K</b>    | <b>484.03K</b>    |
| Other Expenses              | 5,458.16K         | 5,000.17K         | 4,714.91K         | 4,523.60K         | 4,181.30K         | 4,033.18K         | 3,890.18K         | 3,752.07K         | 3,618.59K         | 3,489.47K         |
| Transferred to SA           | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| <b>TOTAL DISBURSEMENTS:</b> | <b>26,317.67K</b> | <b>23,196.19K</b> | <b>22,442.47K</b> | <b>21,523.42K</b> | <b>19,848.07K</b> | <b>19,945.78K</b> | <b>20,374.53K</b> | <b>20,850.05K</b> | <b>21,395.86K</b> | <b>21,952.67K</b> |
| <b>NET LIAB CASHFLOW</b>    | <b>10,070.04K</b> | <b>10,138.29K</b> | <b>9,990.29K</b>  | <b>8,633.89K</b>  | <b>8,027.26K</b>  | <b>6,942.07K</b>  | <b>5,559.99K</b>  | <b>4,163.77K</b>  | <b>2,728.04K</b>  | <b>1,310.49K</b>  |

NOTE: "K" indicates thousands; "M" indicates millions; "B" indicates billions.



Projection Liability Cash Flows  
 Project: TOTAL Segment: Corporate

Starting: 1/1/2000 for 20 years

| Calendar Year               | 2010              | 2011              | 2012              | 2013              | 2014              | 2015              | 2016              | 2017              | 2018              | 2019              |
|-----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| <b>INCOME:</b>              |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
| First Year Premium          | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Exist Bus Ren Prem          | 22,430.16K        | 21,623.73K        | 20,842.66K        | 20,085.68K        | 19,351.62K        | 18,639.18K        | 16,877.83K        | 12,463.91K        | 6,415.22K         | 0.00              |
| New Bus Renewal Prem        | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Single Premium              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Reins Prem Paid             | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Premium Refunds             | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| <b>TOTAL PREMIUM:</b>       | <b>22,430.16K</b> | <b>21,623.73K</b> | <b>20,842.66K</b> | <b>20,085.68K</b> | <b>19,351.62K</b> | <b>18,639.18K</b> | <b>16,877.83K</b> | <b>12,463.91K</b> | <b>6,415.22K</b>  | <b>0.00</b>       |
| Dividends On Deposit        | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Reins Allowances            | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| <b>TOTAL INCOME:</b>        | <b>22,430.16K</b> | <b>21,623.73K</b> | <b>20,842.66K</b> | <b>20,085.68K</b> | <b>19,351.62K</b> | <b>18,639.18K</b> | <b>16,877.83K</b> | <b>12,463.91K</b> | <b>6,415.22K</b>  | <b>0.00</b>       |
| <b>DISBURSEMENTS:</b>       |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
| Death Claims                | 17,317.89K        | 18,045.68K        | 18,825.28K        | 19,659.46K        | 20,540.18K        | 21,441.68K        | 21,341.01K        | 18,371.21K        | 12,201.91K        | 4,223.74K         |
| Maturities                  | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Health Claims               | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Reins Claims                | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Full Surrenders             | 1,338.15K         | 1,272.41K         | 1,175.60K         | 1,047.27K         | 887.09K           | 694.51K           | 468.97K           | 253.22K           | 88,738.57         | 0.00              |
| Nonforfeiture Lapses        | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Annuity Benefits            | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Met Policy Loans            | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Dividends                   | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Withdrawals                 | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| First Yr Commissions        | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| Renewal Commissions         | 455.67K           | 428.67K           | 402.96K           | 378.48K           | 355.17K           | 332.97K           | 247.66K           | 149.37K           | 68,800.02         | 0.00              |
| <b>TOTAL COMMISSIONS:</b>   | <b>455.67K</b>    | <b>428.67K</b>    | <b>402.96K</b>    | <b>378.48K</b>    | <b>355.17K</b>    | <b>332.97K</b>    | <b>247.66K</b>    | <b>149.37K</b>    | <b>68,800.02</b>  | <b>0.00</b>       |
| Other Expenses              | 3,364.52K         | 3,243.56K         | 3,126.40K         | 3,012.85K         | 2,902.74K         | 2,795.88K         | 2,531.67K         | 1,869.59K         | 962.28K           | 0.00              |
| Transferred to BA           | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              | 0.00              |
| <b>TOTAL DISBURSEMENTS:</b> | <b>22,476.23K</b> | <b>22,990.32K</b> | <b>23,530.23K</b> | <b>24,098.07K</b> | <b>24,685.18K</b> | <b>25,265.04K</b> | <b>24,589.32K</b> | <b>20,643.58K</b> | <b>13,321.73K</b> | <b>4,223.74K</b>  |
| <b>NET LIAB CASHFLOW</b>    | <b>-46.08K</b>    | <b>-1,366.59K</b> | <b>-2,687.57K</b> | <b>-4,012.39K</b> | <b>-5,333.56K</b> | <b>-6,625.85K</b> | <b>-7,711.45K</b> | <b>-8,180.07K</b> | <b>-6,906.51K</b> | <b>-4,223.74K</b> |

NOTE: "K" indicates thousands; "M" indicates millions; "B" indicates billions.

GAAP Income Statement

Starting: 1/1/2000 for 20 years

Project: TOTAL Segment: Corporate

|                         | ----- GAAP Book Profits ----- |           |           | ----- Initial Values -----               |               |                      | ----- Present Values ----- |           |           |           |      |
|-------------------------|-------------------------------|-----------|-----------|--|---------------|----------------------|----------------------------|-----------|-----------|-----------|------|
| Present Value ....      | 39,067,010.08                 |           |           | Unamortized - Comm ...                   | 36,281,884.55 | Amortization Base .. | 230,840,139.44             |           |           |           |      |
| % FV Premium .....      | 16.45%                        |           |           | Unamortized DAC - Non-Comm               | 6,686,733.63  | DAC .....            | 58,079,488.37              |           |           |           |      |
| IRR .....               |                               |           |           | n/a                                      |               |                      |                            |           |           |           |      |
| Gen Prof Rel ROI ..     | -182.78%                      |           |           |  |               | Recoverability Ratio | 25.16%                     |           |           |           |      |
| Avg ROE, RORE ...       | 11.94%                        |           |           | Amortization Interest: Specified In Cell |               |                      |                            |           |           |           |      |
|                         | Calendar Year                 | 2000      | 2001      | 2002                                     | 2003          | 2004                 | 2005                       | 2006      | 2007      | 2008      | 2009 |
| <b>REVENUE:</b>         |                               |           |           |  |               |                      |                            |           |           |           |      |
| Investment Income ..    | 3,269,073                     | 4,645,105 | 6,113,943 | 7,638,065                                | 9,268,162     | 10,996K              | 12,768K                    | 14,580K   | 16,434K   | 18,329K   |      |
| Accru Int/Pol Loans ..  | 0                             | 0         | 0         | 0  | 0             | 0                    | 0                          | 0         | 0         | 0         | 0    |
| Premium Income .....    | 36,388K                       | 33,334K   | 31,433K   | 30,157K                                  | 27,875K       | 26,889K              | 25,935K                    | 25,014K   | 24,124K   | 23,263K   |      |
| Dividend Option Prem .. | 0                             | 0         | 0         | 0  | 0             | 0                    | 0                          | 0         | 0         | 0         | 0    |
| TOTAL REVENUE:          | 39,657K                       | 37,980K   | 37,547K   | 37,795K                                  | 37,143K       | 37,894K              | 38,702K                    | 39,594K   | 40,558K   | 41,593K   |      |
| <b>EXPENSES:</b>        |                               |           |           |  |               |                      |                            |           |           |           |      |
| Non-def Expenses ...    | 6,344,297                     | 5,790,430 | 5,441,278 | 5,210,059                                | 4,829,772     | 4,645,470            | 4,468,018                  | 4,297,107 | 4,132,372 | 3,973,499 |      |
| Death Benefits .....    | 11,534K                       | 12,026K   | 12,942K   | 13,774K                                  | 13,921K       | 14,088K              | 14,609K                    | 15,201K   | 15,886K   | 16,606K   |      |
| Surrender Benefits ...  | 519,574                       | 722,550   | 974,008   | 952,788                                  | 1,097,262     | 1,212,018            | 1,297,061                  | 1,352,394 | 1,377,779 | 1,373,112 |      |
| Withdrawals .....       | 0                             | 0         | 0         | 0  | 0             | 0                    | 0                          | 0         | 0         | 0         | 0    |
| Increase in Reserves .. | 7,882,411                     | 7,301,209 | 6,546,053 | 5,878,186                                | 4,698,259     | 4,120,529            | 2,867,910                  | 1,464,710 | -17,011   | -1,436K   |      |
| P/H Dividends .....     | 0                             | 0         | 0         | 0  | 0             | 0                    | 0                          | 0         | 0         | 0         | 0    |
| TOTAL EXPENSES:         | 26,280K                       | 25,840K   | 25,903K   | 25,815K                                  | 24,546K       | 24,066K              | 23,242K                    | 22,315K   | 21,379K   | 20,517K   |      |
| <b>NET GAAP INCOME:</b> |                               |           |           |  |               |                      |                            |           |           |           |      |
| Gross Income .....      | 13,377K                       | 12,140K   | 11,644K   | 11,980K                                  | 12,597K       | 13,817K              | 15,460K                    | 17,279K   | 19,179K   | 21,076K   |      |
| DAC Amort (Comm) ....   | 3,260,784                     | 2,259,983 | 1,852,724 | 1,910,482                                | 1,661,453     | 1,999,149            | 2,360,659                  | 2,707,075 | 2,984,420 | 3,135,831 |      |
| DAC Amort (Non-Comm)    | 282,272                       | 243,644   | 240,495   | 257,738                                  | 247,170       | 286,242              | 327,896                    | 366,856   | 395,885   | 409,389   |      |
| DAC Amort (Macro) ...   | 0                             | 0         | 0         | 0  | 0             | 0                    | 0                          | 0         | 0         | 0         | 0    |
| DAC True Up .....       | 0                             | 0         | 0         | 0  | 0             | 0                    | 0                          | 0         | 0         | 0         | 0    |
| Term Div True Up ...    | 0                             | 0         | 0         | 0  | 0             | 0                    | 0                          | 0         | 0         | 0         | 0    |
| Pre-Tax GAAP Income ..  | 9,833,580                     | 9,635,965 | 9,550,544 | 9,911,667                                | 10,689K       | 11,532K              | 12,772K                    | 14,206K   | 15,798K   | 17,530K   |      |
| FIT Incurred-Gain ...   | 0                             | 0         | 0         | 0  | 0             | 0                    | 0                          | 0         | 0         | 0         | 0    |
| FIT Incurred-Surplus .. | 0                             | 0         | 0         | 0  | 0             | 0                    | 0                          | 0         | 0         | 0         | 0    |
| Inc Def Tax Liab ...    | 0                             | 0         | 0         | 0  | 0             | 0                    | 0                          | 0         | 0         | 0         | 0    |
| NET GAAP INCOME:        | 9,833,580                     | 9,635,965 | 9,550,544 | 9,911,667                                | 10,689K       | 11,532K              | 12,772K                    | 14,206K   | 15,798K   | 17,530K   |      |
| <b>SURPLUS ACCOUNT:</b> |                               |           |           |  |               |                      |                            |           |           |           |      |
| Starting Surplus ...    | 26,477K                       | 36,311K   | 45,947K   | 55,497K                                  | 65,409K       | 76,098K              | 87,630K                    | 100,401K  | 114,607K  | 130,405K  |      |
| Net GAAP Income .....   | 9,833,580                     | 9,635,965 | 9,550,544 | 9,911,667                                | 10,689K       | 11,532K              | 12,772K                    | 14,206K   | 15,798K   | 17,530K   |      |
| Capital Transfer ...    | 0                             | 0         | 0         | 0  | 0             | 0                    | 0                          | 0         | 0         | 0         | 0    |
| ENDING SURPLUS:         | 36,311K                       | 45,947K   | 55,497K   | 65,409K                                  | 76,098K       | 87,630K              | 100,401K                   | 114,607K  | 130,405K  | 147,935K  |      |
| Return on GAAP Equity   | 31.32%                        | 23.43%    | 18.83%    | 16.40%                                   | 15.11%        | 14.08%               | 13.58%                     | 13.21%    | 12.90%    | 12.60%    |      |
| GAAP Book Profit .....  | 7,119,657                     | 5,914,100 | 4,840,992 | 4,223,184                                | 3,984,108     | 3,732,052            | 3,789,471                  | 3,914,406 | 4,051,233 | 4,163,764 |      |
| Unamort DAC (Comm) .... | 40,941K                       | 43,338K   | 44,571K   | 44,347K                                  | 42,685K       | 40,686K              | 38,326K                    | 35,619K   | 32,634K   | 29,498K   |      |
| Unamort DAC (Non-Comm)  | 6,404,462                     | 6,160,818 | 5,920,331 | 5,662,595                                | 5,415,425     | 5,129,183            | 4,801,297                  | 4,434,441 | 4,038,555 | 3,629,166 |      |
| Unamort DAC (Macro) ... | 0                             | 0         | 0         | 0  | 0             | 0                    | 0                          | 0         | 0         | 0         | 0    |
| GAAP Reserve .....      | 50,876K                       | 58,177K   | 64,723K   | 70,601K                                  | 75,300K       | 79,420K              | 82,288K                    | 83,751K   | 83,736K   | 82,300K   |      |
| Deferred Tax Liability  | 0                             | 0         | 0         | 0  | 0             | 0                    | 0                          | 0         | 0         | 0         | 0    |

NOTE: "K" indicates thousands; "M" indicates millions; "B" indicates billions.

GAAP Income Statement  
Project: TOTAL Segment: Corporate

Starting: 1/1/2000 for 20 years

| ----- GAAP Book Profits ----- |               | ----- Initial Values -----               |               |                      |                |                      | ----- Present Values ----- |           |           |           |
|-------------------------------|---------------|--|---------------|----------------------|----------------|----------------------|----------------------------|-----------|-----------|-----------|
| Present Value....             | 38,067,010.08 | Unamortized DAC - Comm ...               | 36,281,884.95 | Amortization Base .. | 230,840,139.44 |                      |                            |           |           |           |
| % FV Premium.....             | 16.49%        | Unamortized DAC - Non-Comm               | 6,686,733.63  | DAC .....            | 58,079,488.37  |                      |                            |           |           |           |
| IRR .....                     | n/a           |  |               |                      |                |                      |                            |           |           |           |
| Gen Prof Rel ROI.             | -182.75%      |  |               |                      |                | Recoverability Ratio |                            | 25.16%    |           |           |
| Avg ROE, RORE ...             | 11.94%        | Amortization Interest: Specified In Cell |               |                      |                |                      |                            |           |           |           |
| Calendar Year                 | 2010          | 2011                                     | 2012          | 2013                 | 2014           | 2015                 | 2016                       | 2017      | 2018      | 2019      |
| <b>REVENUE:</b>               |               |  |               |                      |                |                      |                            |           |           |           |
| Investment Income ..          | 20,278K       | 22,289K                                  | 24,371K       | 26,531K              | 28,777K        | 31,119K              | 33,550K                    | 36,115K   | 38,984K   | 42,363K   |
| Accru Int/Pol Loans.          | 0             | 0  | 0             | 0                    | 0              | 0                    | 0                          | 0         | 0         | 0         |
| Premium Income .....          | 22,430K       | 21,624K                                  | 20,843K       | 20,086K              | 19,352K        | 18,639K              | 16,878K                    | 12,464K   | 6,415,218 | 0         |
| Dividend Option Prem          | 0             | 0  | 0             | 0                    | 0              | 0                    | 0                          | 0         | 0         | 0         |
| TOTAL REVENUE:                | 42,708K       | 43,912K                                  | 45,214K       | 46,617K              | 48,129K        | 49,758K              | 50,428K                    | 48,579K   | 45,400K   | 42,363K   |
| <b>EXPENSES:</b>              |               |  |               |                      |                |                      |                            |           |           |           |
| Non-Def Expenses ...          | 3,820,198     | 3,672,231                                | 3,529,359     | 3,391,331            | 3,257,910      | 3,128,846            | 2,779,333                  | 2,019,555 | 1,031,083 | 0         |
| Death Benefits .....          | 17,318K       | 18,048K                                  | 18,825K       | 19,659K              | 20,540K        | 21,442K              | 21,341K                    | 18,371K   | 12,202K   | 4,223,736 |
| Surrender Benefits .          | 1,338,147     | 1,272,406                                | 1,175,597     | 1,047,275            | 887,093        | 694,512              | 468,973                    | 253,218   | 88,739    | 0         |
| Withdrawals .....             | 0             | 0  | 0             | 0                    | 0              | 0                    | 0                          | 0         | 0         | 0         |
| Increase in Reserves          | -2,761K       | -4,127K                                  | -5,636K       | -7,306K              | -9,145K        | -11,138K             | -12,922K                   | -13,273K  | -10,565K  | -5,428K   |
| P/H Dividends .....           | 0             | 0  | 0             | 0                    | 0              | 0                    | 0                          | 0         | 0         | 0         |
| TOTAL EXPENSES:               | 19,715K       | 18,864K                                  | 17,894K       | 16,792K              | 15,540K        | 14,127K              | 11,667K                    | 7,371,230 | 2,756,592 | -1,204K   |
| <b>NET GAAP INCOME:</b>       |               |  |               |                      |                |                      |                            |           |           |           |
| Gross Income .....            | 22,993K       | 25,048K                                  | 27,319K       | 29,825K              | 32,588K        | 35,631K              | 38,760K                    | 41,208K   | 42,643K   | 43,567K   |
| DAC Amort (Comm) ...          | 3,218,196     | 3,315,071                                | 3,427,543     | 3,556,818            | 3,704,234      | 3,871,249            | 3,803,655                  | 2,986,887 | 1,614,680 | 0         |
| DAC Amort (Non-Comm)          | 415,170       | 422,794                                  | 432,373       | 444,052              | 457,565        | 474,282              | 458,953                    | 347,654   | 175,923   | 0         |
| DAC Amort (Macro) ..          | 0             | 0  | 0             | 0                    | 0              | 0                    | 0                          | 0         | 0         | 0         |
| DAC True Up .....             | 0             | 0  | 0             | 0                    | 0              | 0                    | 0                          | 0         | 0         | 0         |
| Term Div True Up ...          | 0             | 0  | 0             | 0                    | 0              | 0                    | 0                          | 0         | 0         | 0         |
| Pre-Tax GAAP Income.          | 19,359K       | 21,311K                                  | 23,459K       | 25,824K              | 28,426K        | 31,286K              | 34,497K                    | 37,873K   | 40,852K   | 43,567K   |
| FIT Incurred-Gain ..          | 0             | 0  | 0             | 0                    | 0              | 0                    | 0                          | 0         | 0         | 0         |
| FIT Incurred-Surplus          | 0             | 0  | 0             | 0                    | 0              | 0                    | 0                          | 0         | 0         | 0         |
| Inc Def Tax Liab ...          | 0             | 0  | 0             | 0                    | 0              | 0                    | 0                          | 0         | 0         | 0         |
| NET GAAP INCOME:              | 19,359K       | 21,311K                                  | 23,459K       | 25,824K              | 28,426K        | 31,286K              | 34,497K                    | 37,873K   | 40,852K   | 43,567K   |
| <b>SURPLUS ACCOUNT:</b>       |               |  |               |                      |                |                      |                            |           |           |           |
| Starting Surplus ...          | 147,935K      | 167,295K                                 | 188,605K      | 212,065K             | 237,889K       | 266,315K             | 297,601K                   | 332,098K  | 369,972K  | 410,824K  |
| Net GAAP Income .....         | 19,359K       | 21,311K                                  | 23,459K       | 25,824K              | 28,426K        | 31,286K              | 34,497K                    | 37,873K   | 40,852K   | 43,567K   |
| Capital Transfer ...          | 0             | 0  | 0             | 0                    | 0              | 0                    | 0                          | 0         | 0         | 0         |
| ENDING SURPLUS:               | 167,295K      | 188,605K                                 | 212,065K      | 237,889K             | 266,315K       | 297,601K             | 332,098K                   | 369,972K  | 410,824K  | 454,391K  |
| <b>Return on GAAP Equity</b>  |               |  |               |                      |                |                      |                            |           |           |           |
| GAAP Book Profit .....        | 4,195,820     | 4,162,936                                | 4,127,453     | 4,087,524            | 4,042,670      | 3,988,461            | 3,993,374                  | 3,833,250 | 2,930,399 | 1,457,549 |
| Unmort DAC (Comm) ...         | 26,280K       | 22,965K                                  | 19,538K       | 15,981K              | 12,276K        | 8,405,222            | 4,601,567                  | 1,614,680 | 0         | 0         |
| Unmort DAC (Non-Comm)         | 3,213,936     | 2,791,202                                | 2,358,829     | 1,914,778            | 1,456,813      | 982,531              | 523,577                    | 175,923   | 0         | 0         |
| Unmort DAC (Macro) ..         | 0             | 0  | 0             | 0                    | 0              | 0                    | 0                          | 0         | 0         | 0         |
| GAAP Reserve .....            | 79,539K       | 75,413K                                  | 69,777K       | 62,476K              | 53,326K        | 42,187K              | 29,266K                    | 15,993K   | 5,427,734 | 0         |
| Deferred Tax Liability        | 0             | 0  | 0             | 0                    | 0              | 0                    | 0                          | 0         | 0         | 0         |

NOTE: "K" indicates thousands; "M" indicates millions; "B" indicates billions.