Critical Illness Rider for Individual Insurance

Wendy Lee, FSA, MAAA

Abstract

The purpose of this paper is to outline the development of a critical illness rider to be launched on a guaranteed level term product. The paper will address the following topics:

- market needs analysis,
- design considerations,
- benefit design,
- pricing assumption, and
- development of pricing model and pricing results, including sensitivity testing.

The market needs analysis demonstrates that the United States market needs a critical illness product to meet the need of more people surviving critical illness. The financial implications of surviving a critical illness can be devastating to a household's standard of living. The target market for this rider aligns perfectly with the market for the underlying base term product.

The design considerations are important for the critical illness rider because the rider is relatively new in the U.S. market. The rider was designed to be a stand-alone benefit rather than an acceleration of death benefit. The covered conditions were limited to simplify the design and because experience in other countries concluded that 80 percent of claims are from three conditions: cancer, heart attack and stroke. The benefit amount, premium pattern, available underwriting classes, issue age ranges, and waiting period were also considered for the design.

The critical illness rider will pay a lump-sum benefit to the insured if diagnosed with a covered condition, such as cancer, stroke or heart attack. The death benefit on the term product will be reduced only if the insured dies within 28 days of the diagnosis of the critical illness.

The most critical pricing assumption for the critical illness rider is the claim cost. Because the product is relatively new in the U.S. market, there is not an industry table to modify for company experience. For this assumption, modifications to the Critical Illness Base Table (CIBT93) were made to adjust for factors such as limiting the number of conditions covered, trending the data, adjusting for insured population and smoker/nonsmoker split. Other pricing assumptions developed were net investment income rate, the surplus earned rate, average size, expenses, and reserve methodologies and assumptions. The profit goals for the critical illness rider are:

- Statutory Return on Investment (ROI) > 20%
- Profit Margin > 5%
- Breakeven Year no later than Year 4
- Weighted GAAP ROE > 20%

The pricing model follows a deterministic framework with a monthly projection frequency. The pricing results for the three key cells in the base case scenario are:

Profit Results - Base Case			
Male, Std NS	35	45	55
Periodic Premium Per Unit	$9.44	$13.50	$18.63
Return on Investment (ROI)	21%	22%	20%
Profit Margin	8%	7%	6%
Breakeven Year	2	3	3
Weighted Average GAAP ROE	23%	26%	22%

Sensitivity analysis was conducted on the lapse rate, net investment income rate, morbidity assumption, and mortality assumption. The assumption with the greatest impact on profit results, due to experience being different than assumed, is the morbidity assumption.

Introduction

Today, many people survive a critical illness that may have been fatal a few years ago. Critical illness insurance offers a unique way to protect against the financial hardships associated with surviving a critical illness. A lump-sum benefit from a critical illness product will provide the insured with necessary funds to pay for expenses generally not reimbursed by health insurance plans.

[author—this information is repeated from above…OK to delete it here?]This paper addresses the development of a critical illness rider to be attached to a guaranteed level term product.

The paper will address the following topics in the development of this rider:

- Market needs analysis,
- Design considerations,
- Benefit design,
- Pricing assumption, and
- Development of pricing model and pricing results, including sensitivity testing.

Market Needs Analysis

The advances in medical science are increasing life expectancy and increasing the survival rate of a critical illness. The medical and financial burdens imposed by a critical illness could exceed a family's total savings. Nearly half of all U.S. bankruptcy filings are attributed to illness, injury or substantial medical debt. Further, about 80 percent had some form of medical insurance, suggesting that that basic health insurance coverage is not sufficient. A critical illness can potentially deplete most or all of a family's savings in the first year. Here is an example for a middle-income household:

Scenario 1: Wage Earner out of work for six months with Short Term Disability (STD).
Scenario 2: Wage Earner out of work for 12 months without Disability Insurance (DI).

		Cancer Diagnosis	
	Base case	Scenario 1	Scenario 2
Salary	$50	$40	$18
Income Tax	$14	$11	$3
Personal debt payments	$8	$8	$8
Necessities	$15	$15	$15
Illness-related costs			
• Qualified medical expenses	$1	$3	$3
• Unqualified medical expenses	$0	$4	$4
• Non-medical costs	$0	$5	$10
Income Available after baseline expenses	**$12**	**-$4**	**-$26**
Cash shortfall vs. base case		**-$16**	**-$38**

The net impact on a household's standard of living in Scenario 1 decreased $16,000 and in Scenario 2 is decreased $38,000. A critical illness product can address this need by providing a lump-sum benefit at the time of diagnosis of an illness. The lump-sum benefit is not expense reimbursement coverage and not based on the inability to work. This gives the insured the control of how to spend the benefit. Based on internal company consumer economic model, two-thirds of the costs associated with critical illness are indirect costs and are not covered by medical insurance.

Critical Illness insurance covers expenses not reimbursed by other types of insurance. The lump-sum benefit has multiple uses, which can include, but are not limited to the following:

- Co-pays and deductibles
- Experimental treatment
- Alternative medicine
- Travel to treatment center
- Costs associated with doctor visits
- Child care
- Spouse taking time off to care for insured
- Housekeeping, meals, clothing
- Home and/or automobile modifications
- Vacations/trips
- Counseling
- Caregiver costs

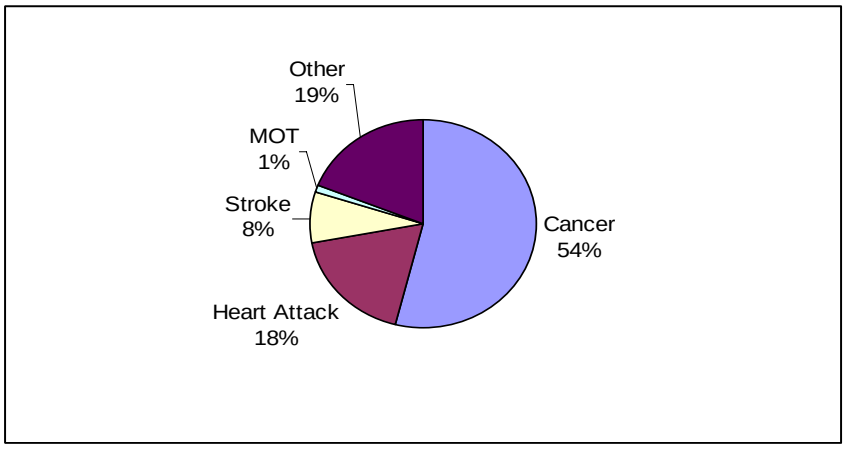
The target market for the critical illness insurance is issue ages 30 to 55 years old in the middle-income market. The primary distribution channel will be an individual distribution channel, which currently represents about 25 percent of the market for critical illness distribution. The target market for guaranteed level term products aligns perfectly with the critical illness insurance. As such, the rider will be attached to this product for launch.

Design Considerations

The first design option that needs to be considered is whether the product will be a stand-alone living benefit or an acceleration of the death benefit. The reasons for the stand-alone benefit are a simpler design, ease of administration, easier to explain and understand, and the death benefit is not reduced by critical illness benefit. The reason for an acceleration of death benefit is the ability to offer lower premiums compared to the stand-alone benefit.

The rider will be attached to a guaranteed level term product; which requires level premiums to be paid for a term period and if the insured dies during the term period, the beneficiary will receive the death benefit proceeds. However, if the insured survives to the end of the term period, the death benefit is not payable. The insured can continue to pay premiums after the level period to continue coverage, but the premiums increase significantly. The rider will work in a similar fashion, except the premium will remain level for the entire period of coverage. Level premiums will be required, and if the insured is diagnosed with a covered condition, then the insured will receive the lump-sum benefit of the rider. The lump-sum benefit of the critical illness rider will be paid at the time of diagnosis. If the insured survives the survival period, the amount of time the insured must survive after being diagnosed with the illness in order to qualify for the rider benefit, then the full death benefit will be paid upon death. However, if the insured dies within the survival period, the death benefit will be reduced by the amount of the critical illness benefit.

In Canada and the United Kingdom, where this type of product has been available for a period of time, the covered conditions can range from four or five to more than 20. Based on research in these countries, cancer, heart attack and stroke account for more than 80 percent of claims. Cancer accounts for more than 50 percent of the claims from critical illness insurance. The pie chart below shows the percentage of claims from each covered condition.



Source: A Critical Review: Report of the Critical Illness Healthcare Study Group.

By limiting the number of conditions covered, this will simplify the product structure and simplify the underwriting and claims process. This also addresses the needs of the target market, which needs simple products to be successful. It is important to note that some states require minimum specified illnesses to be covered. Further, the standard definitions of the critical illnesses listed above are not currently industry standard. The definitions need to be simple so that it is understandable, but not so simple that it gets you in trouble. The definitions must be tight enough so that you do not permit events that would be considered critical illness to come into play that were not necessarily reflected in the pricing. In other countries, such as the United Kingdom, there has been a significant effort to create standard definitions for the industry to

make the descriptions of coverage clearer and the comparisons of products easier. This will improve the policyholder's and agent's understanding and confidence in the product.

Next, the critical illness maximum benefit amount needs to be limited due to the risks associated with this product. The maximum ratio of critical illness benefit amount compared to the death benefit needs to be limited to a certain percentage. This will provide that the underlying product is still a life insurance product, and the critical illness rider is an ancillary benefit. Also, there is limited industry experience with critical illness insurance, so by limiting the benefit amount we are mitigating some of the potential unknown risk exposure. The critical illness benefit amount could be reduced after age 65 to reduce the cost of the rider since incidence rates increase exponentially after age 65.

The premium pattern for this rider could be a level premium, lump-sum premium or increasing premium. The level premium pattern is the obvious choice because it will follow the underlying level term product. The lump-sum premium or increasing premium would not be an attractive option for marketing.

Critical illness is a type of insurance that will be anti-selected against by nature of the product. The underwriting classes need to be limited on this product because there is limited industry experience with this type of insurance. The data available is sufficient to split the underwriting classes into smoker and nonsmoker and to have sex-distinct tables. However, preferred risk classes should not be available until there is sufficient industry experience to support the differences in rates and we have the ability to create underwriting criteria for the preferred class. Further, the market is demanding a simple product design for ease of understanding that will be met with the one class of nonsmoker underwriting.

Issue ages for a critical illness insurance need to be limited to avoid anti-selection. Incidence rates increase dramatically after age 65 and offering the rider after this age would be too expensive. This should not be an issue with the term market because the target market is issue ages 30-55.

Finally, the waiting period to receive benefits after being underwritten is 30 days, except for cancer, which is 90 days, to avoid anti-selection. The waiting period rules for the rider will follow the rules for the underlying guaranteed level term product.

Benefit Design

The benefit design is a stand-alone critical illness rider attached to a guaranteed level term product. A lump-sum benefit will be paid to the insured, if the policy is in-force at the time of a qualifying event and the waiting period has been satisfied. A qualifying event is defined as being diagnosed with one of the following covered conditions:

1) Invasive Cancers
2) Heart attack
3) Stroke

The guaranteed level term death benefit will be reduced by the amount of the critical illness proceeds if the insured dies during the survival period. The rider has no cash value and does not generate non-forfeiture benefits at any time.

Risk Classifications	Male / Female Standard Nonsmoker and Standard Smoker
Issue Ages	20-60
Premium Pattern	Level Premium Pattern
Coverage Amounts	Max {10% of Death Benefit, $50,000} Subject to overall maximum limit of $250,000
Benefit Decrease	50% at Attained Age 65
Survival Period	28 Days
Waiting Period	30 Days 90 Days for Cancer
Policy Fee	$36 Annually, non commissionable

Pricing Assumptions

Claim costs for pricing critical illness is difficult to obtain due to the lack of industry data and experience. One source to consider is population data, but that needs to be adjusted to reflect the insured population. There is some experience from other countries, but such data cannot just be taken at face value. The definitions and medical standard in these countries may not be the same as in the United States.

The claim costs used were a modification of a Critical Illness Base Table (CIBT93) developed in the United Kingdom and outlined in "A Critical Review: Report of the Critical Illness Healthcare Study Group." The first modification was to adjust the base table to reflect only the covered conditions in the rider: cancer, heart attack and stroke. Next, the rates were deemed applicable for 1993 experience, but a rate adjustment needs to be made to adjust the experience to current levels. The trend factor was not a uniform rate applied to the modified table. Rather, each illness was modified based on the trend factors developed in the 1993 study. Also, the trend factors were not uniformly applied across all issue ages and genders.

Trend Factors

Illness	Male	Female
Cancer	1% Increase	2% Increase
Heart Attack	2% Decrease	2% Decrease
Stroke	n/a	n/a

These trend factors are aggressive due to the fact that data available was not split between smokers and nonsmokers. If the rates were split between smoker and nonsmoker, the rates may show a greater increase. Part of the general deterioration in cancer experience is being hidden by the decrease in the proportion of smokers. Therefore, the trend factors have only been applied for five years to account for this difference. There is not sufficient data to support a trend factor for strokes, so we have assumed no trend factor in the rates.

The data available for the CIBT93 was not split by smoker and nonsmoker status. The rates need to be split into smoker and nonsmoker tables. The differential used to split the table is similar to the differential in mortality experience, although a higher differential will be used for critical illness, since the main cause of claims are affected by smoking for each of the three covered conditions. The factor used to split the tables is based on company mortality experience and increased to reflect a differential for critical illness.

Finally, the data needs to be adjusted for the fact that population data was used to develop the table. Because we are underwriting the rider, the rates need to be adjusted to reflect insured pool versus the population data. As a result, the next step is to modify the rates by adjusting for company mortality experience versus the population mortality, which varies by issue age and risk classification.

The CIBT93 table includes a 28-day survival period for the stand-alone rates. I made no modifications to the rates to account for this, because the rider is designed such that if the insured dies within the 28 days of diagnosis of the critical illness, the death benefit on the base term policy will be reduced by the benefit amount of the critical illness. Therefore, this design feature will account for a 28-day survival period, since technically a claim was not paid on the critical illness rider. Rather, a portion of the death benefit will be paid less than 28 days earlier than it would have been paid. The early payment of a portion of the death benefit will be insignificant to the cost of the rider.

Underwriting for the critical illness rider will occur simultaneously with the base term policy. The risk factors that are examined for the rider are similar to the risk factors for a life insurance policy. If there is prior history of the illness, the policy is declined. The family history is important for cancers and heart conditions.

The net investment income rate is a conservative long-term average of the 10-Year Constant Maturity Treasury (CMT) rate.

Year	10-Yr Annual Constant Maturity Treasury (CMT) Rate
1984	12.46
1985	10.62
1986	7.67
1987	8.39
1988	8.85
1989	8.49
1990	8.55
1991	7.86
1992	7.01
1993	5.87
1994	7.09
1995	6.57
1996	6.44
1997	6.35
1998	5.26
1999	5.65
2000	6.03
2001	5.02
2002	4.61
2003	4.01
Average	7.14

Source: Federal Reserve Board

The surplus earned rate is expected to earn a higher rate of return, 100 basis points (bps), than the net investment income rate because the investment horizon is longer and will follow the company's surplus investment strategy.

Lapse rates have a significant effect due to the increasing number of incidences from age 65-75. If we assume too high of a lapse rate, the product will be lapse-supported. The lapse rates assumption will follow the lapse assumption for the base term product during the level period. During the ultimate period when the base term rates will increase significantly, the rider lapse rates should be kept fairly low to reflect that only the unhealthy lives will persist. The policyholders who will keep their policies in-force expect to submit a claim, otherwise they would not continue to pay the increasing term rates in the ultimate period.

The average size for the critical illness rider is assumed to be 10 percent of the average base term face amount. The personal expenses (e.g., ramp installation in the home) that will be covered by the lump-sum benefit do not vary by issue age or risk classification. The implies that the underlying assumption for average size of the critical illness rider will not vary by issue age or risk classification.

Expenses must reflect the policy acquisition and maintenance of the rider. Commissions will be paid on the premium attributable to the critical illness rider with the same rates as the base policy. The policy fee will not be commissionable, which is in line with the base term pricing. Policy acquisition expenses will be the incremental cost for underwriting the rider and for developing marketing materials and training of the rider. The maintenance expense will be an incremental cost over the maintenance expense used for the base term pricing because the base and rider will be administered on the same system. Claim expenses will be a percentage of claim payments and are not an incremental cost over the term administration. The premiums will be subject to a premium tax, which will be a flat percentage for all states,

Statutory reserves for this product are two-year preliminary term based on 105 percent of expected claims, discounted using the 1980 CSO mortality table and 4 percent interest. Tax reserves use the same methodology, but with a different interest rate defined by the Internal Revenue Service (IRS). Statutory required surplus approximates 300 percent NAIC RBC, and is refined to comply with internal company standards.

GAAP reserves are calculated in accordance with FAS 60. The provisions for adverse deviations (PADs) used are for the interest assumption and morbidity assumption.

The profit measures for this product are:

- Statutory Return on Investment (ROI)
- Profit Margin
- Breakeven Year
- Weighted GAAP ROE

The pricing goals were established such that the critical illness rider is relatively new to the market, so there will be less competitive pressure on price. Also, the rider is considered to be a riskier investment than the other products in the portfolio, and as such, will demand a higher rate of return. The pricing goals are set to be cell-based goals. Therefore, one cell will not be subsidized by another and the model office profit goals will be met by the individual cell based pricing goals. The pricing goals for the critical illness rider are:

- ROI > 20%
- Profit Margin > 5%
- Breakeven Year no later than year 4
- Weighted GAAP ROE > 20%

Pricing Model

The pricing for the critical illness rider is similar to pricing the base term policy. The probability of getting a critical illness in the year of age x to x+1 is a binomial probability, just like the probability of dying. Therefore, the model developed to price the critical illness rider uses the same considerations as pricing the base term policy.

The pricing model follows a deterministic framework with a monthly projection frequency. The model will generate future cash flows of the critical illness rider based on the product specifications and pricing assumptions. The three key cells that were priced are:

- 35 Male Standard Nonsmoker
- 45 Male Standard Nonsmoker
- 55 Male Standard Nonsmoker

The periodic premium per unit for each cell was solved for by setting the Statutory ROI equal to 20 percent, the pricing goal.

The pricing results for the base case are as follows:

Profit Results - Base Case			
Male, Std NS	35	45	55
Periodic Premium Per Unit	$9.44	$13.50	$18.63
Return on Investment (ROI)	21%	22%	20%
Profit Margin	8%	7%	6%
Breakeven Year	2	3	3
Weighted Average GAAP ROE	23%	26%	22%

The three key cells meet the pricing objectives that were set for the product. The details of the statutory and GAAP profit calculations can found in Appendix B and Appendix C.

A sensitivity analysis on the key assumptions needs to be performed to understand what a change in an assumption has on the profit results. We also need to know which assumptions to monitor and study as experience emerges. Assumptions to vary for the sensitivity analysis are lapse rates, mortality, morbidity and net investment income rate.

Lapse rates need to be sensitivity tested to verify the rider is not lapse supported by using too high of a lapse rate in the ultimate years. Also, we need to test the other extreme, too high lapse rates in the early years, to make sure we can still recover our acquisition expenses.

Profit Results - Lapse Rates Halved			
Male, Std NS	35	45	55
Periodic Premium Per Unit	$9.44	$13.50	$18.63
Return on Investment (ROI)	16%	19%	19%
Profit Margin	8%	7%	7%
Breakeven Year	2	2	3
Weighted Average GAAP ROE	21%	24%	23%

Profit Results - Lapse Rates Doubled			
Male, Std NS	35	45	55
Periodic Premium Per Unit	$9.44	$13.50	$18.63
Return on Investment (ROI)	24%	24%	18%
Profit Margin	5%	4%	3%
Breakeven Year	3	3	3
Weighted Average GAAP ROE	23%	24%	20%

We are not meeting the profit goals when the lapse rates are halved, but the ROI is still greater than 15 percent in all scenarios and the GAAP ROE does not fall below 20 percent.

Net investment income rate assumption will be increased 100 bps and decreased 100 bps to test the sensitivity of the conservative long-term interest assumption. The profit results should not be significantly affected be the assumption because the product is not interest-sensitive.

Profit Results - Net Investment Income rate minus 100bps			
Male, Std NS	35	45	55
Periodic Premium Per Unit	$9.44	$13.50	$18.63
Return on Investment (ROI)	18%	20%	19%
Profit Margin	6%	6%	5%
Breakeven Year	2	3	3
Weighted Average GAAP ROE	19%	21%	20%

Profit Results - Net Investment Income rate plus 100bps			
Male, Std NS	35	45	55
Periodic Premium Per Unit	$9.44	$13.50	$18.63
Return on Investment (ROI)	23%	24%	21%
Profit Margin	9%	8%	6%
Breakeven Year	2	3	3
Weighted Average GAAP ROE	30%	33%	25%

As the profit results show, the rider is not sensitive to a 100 bps change in the interest rate assumption.

Morbidity assumption needs to reflect an increase and decrease in claims. Because there is no prior industry experience with this type of product, the results of this analysis are important.

If the claims are 25 percent higher, the issue age 55 statutory ROI falls to 9 percent and a profit margin of 1 percent. So, as experience emerges, the results of the older issue ages need to be monitored for adverse experience.

Profit Results - Morbidity 25% increase Expected Claims			
Male, Std NS	35	45	55
Periodic Premium Per Unit	$9.44	$13.50	$18.63
Return on Investment (ROI)	17%	15%	9%
Profit Margin	5%	3%	1%
Breakeven Year	2	3	5
Weighted Average GAAP ROE	20%	18%	12%

Profit Results - Morbidity 25% decrease Expected Claims			
Male, Std NS	35	45	55
Periodic Premium Per Unit	$9.44	$13.50	$18.63
Return on Investment (ROI)	24%	28%	29%
Profit Margin	10%	11%	10%
Breakeven Year	2	2	3
Weighted Average GAAP ROE	26%	34%	33%

The mortality assumptions should not have a significant impact on the profit results for a 10 percent improvement or worsening. The mortality assumption in this product is used to

determine how many lives will be left in the eligible population to incur a critical illness. Therefore, as the results show, there is not a significant impact on profit for a 10 percent change in the mortality assumption.

Profit Results - Mortality 10% worse			
Male, Std NS	35	45	55
Periodic Premium Per Unit	$9.44	$13.50	$18.63
Return on Investment (ROI)	21%	22%	20%
Profit Margin	8%	7%	6%
Breakeven Year	2	3	3
Weighted Average GAAP ROE	23%	25%	22%

Profit Results - Mortality 10% improvement			
Male, Std NS	35	45	55
Periodic Premium Per Unit	$9.44	$13.50	$18.63
Return on Investment (ROI)	21%	22%	20%
Profit Margin	8%	7%	6%
Breakeven Year	2	3	3
Weighted Average GAAP ROE	23%	26%	22%

Conclusion

The critical illness rider will pay a lump-sum benefit to the insured if diagnosed with a covered condition: cancer, stroke or heart attack. The death benefit on the term product will be reduced only if the insured dies within 28 days of the diagnosis of the critical illness.

The premium for the critical illness rider was set such that the pricing goals were met for each of the three key cells. Additional profit testing was conducted on a few key assumptions to see the sensitivity of the profit results.

The critical illness rider launched with a guaranteed level term product will meet the market demand for this type of insurance.

Appendix A

Pricing Assumptions

Observation Period	30 Years
Premium Mode	Monthly
Mortality	Based on company experience
Basic Claim Cost	Modification to CIBT93
Claim Cost Modifier for insured data	Based on company mortality experience versus population mortality
Claim Cost Modifier for smoker/nonsmoker	Based on company mortality experience modify to reflect higher differential for smokers Nonsmoker = 85% Smokers = 165%
Statutory reserves	Two year preliminary term • 105% of expected claim costs • 1980 CSO ultimate mortality • 4.0% interest rate
Tax Reserves	Two year preliminary term • 105% of expected claim costs • 1980 CSO ultimate mortality • 5.27% interest rate
Target Surplus	12.00% of Statutory Reserves 50.00% of Annualized Periodic Premium
Withdrawals	Vary by duration and issue age

	Issue Age		
Duration	35	45	55
1	.175	.150	.125
2	.150	.130	.110
3	.125	.110	.095
4	.100	.090	.080
5	.075	.070	.065
6+	.050	.050	.050

Average Size

Issue Age	Male Standard Nonsmoker
35	$50.00
45	$50.00
55	$50.00

Expenses

Commissions	
Year 1	106.00%
Years 2 – 10	3.00%
Years 11+	1.00%
Policy Acquisition Costs	
Marketing	$15.00
UW & Issue	$43.00
Maintenance Expense (Per Policy)	$15 per policy per year
Maintenance Expense (Percent Premium)	3.00%

Claims expense	2.00% of claim payments
Premium Tax	2.50%

Interest Rates

Net Investment Income Rate	5.50%
Inflation rate	0.00%
Surplus earned rate	6.50%

Taxation

Corporate tax rate	35.00% of taxable income
DAC	7.70% of premiums
Amortization period for DAC	10 Years

Target Surplus

Percent of Statutory Reserves	12.00%
Percent of Annualized Periodic Premium	50.00%

Reinsurance

None modeled

GAAP FAS60

Provision for Adverse Deviations (PADs)	
Interest	2.00% decrease
Morbidity	1.00% Increase
Amortization	30 Years

Profit Measures

The Profit measures for this product are:

1) Statutory Return on Investment (ROI)

Solve for the rate of return that sets the present value of distributable earnings equal to zero.

2) Profit Margin

Present Value of Distributable Earnings divided by the Present Value of Premiums.

3) Breakeven Year

Policy year in which the accumulated profits first turn positive and remain positive.

4) Weighted GAAP ROE

Weighted average of After-Tax Stockholder Earnings divided by weighted average of Stock Equity.

Stock Equity(t) = Stock Assets(t) - Stock Liabilities(t)

Stock Assets(t) = Statutory Reserve(t) + DAC(t)

Stock Liabilities(t) = Benefit Reserve(t) + Deferred FIT(t)

Appendix B
Annual Profit Results
Statutory Results

35 Male Standard Nonsmoker

Risk Classification	Male Std NS
Issue Age	35
Premium	$9.44
ROI	20.75%
Profit Margin	7.66%
Weighted ROE	23.14%

																				Target Surplus Adjustments				
Policy Year	Policy Month	Prem	Inv Inc	Claims Incurred	Stat Reserve Incr	Comms	Acq	Main	Prem Tax	Book Profit Before FIT	Tax Reserve Incr	Taxable Profit	FIT	Book Profit After FIT	InvInc	Target Surplus Incr	FIT on Target Surplus	Distr Earn
1	12	$ 9.31	$ (0.01)	$ 0.50	$ -	$ 9.17	$ 1.16	$ 0.56	$ 0.23	$ (2.32)	$ -	$ (1.67)	$ (0.58)	$ (1.74)	$ 0.27	$ 4.19	$ 0.09	$ (5.75)
2	12	$ 7.78	$ 0.03	$ 0.50	$ -	$ 0.22	$ -	$ 0.47	$ 0.19	$ 6.42	$ -	$ 6.89	$ 2.41	$ 4.01	$ 0.25	$ (0.57)	$ 0.09	$ 4.74
3	12	$ 6.69	$ 0.16	$ 0.52	$ 5.13	$ 0.19	$ -	$ 0.41	$ 0.17	$ 0.43	$ 4.44	$ 1.45	$ 0.51	$ (0.08)	$ 0.23	$ 0.16	$ 0.08	$ (0.08)
4	12	$ 5.92	$ 0.40	$ 0.58	$ 4.17	$ 0.17	$ -	$ 0.36	$ 0.15	$ 0.90	$ 3.65	$ 1.65	$ 0.58	$ 0.32	$ 0.24	$ 0.18	$ 0.09	$ 0.30
5	12	$ 5.39	$ 0.61	$ 0.65	$ 3.68	$ 0.15	$ -	$ 0.33	$ 0.13	$ 1.05	$ 3.25	$ 1.63	$ 0.57	$ 0.48	$ 0.26	$ 0.23	$ 0.09	$ 0.42
6	12	$ 5.04	$ 0.81	$ 0.75	$ 3.54	$ 0.14	$ -	$ 0.32	$ 0.13	$ 0.98	$ 3.15	$ 1.45	$ 0.51	$ 0.47	$ 0.27	$ 0.29	$ 0.10	$ 0.36
7	12	$ 4.79	$ 0.99	$ 0.81	$ 3.22	$ 0.13	$ -	$ 0.30	$ 0.12	$ 1.19	$ 2.90	$ 1.54	$ 0.54	$ 0.65	$ 0.29	$ 0.26	$ 0.10	$ 0.58
8	12	$ 4.54	$ 1.15	$ 0.88	$ 2.89	$ 0.13	$ -	$ 0.29	$ 0.11	$ 1.39	$ 2.64	$ 1.62	$ 0.57	$ 0.82	$ 0.30	$ 0.23	$ 0.11	$ 0.79
9	12	$ 4.31	$ 1.30	$ 0.93	$ 2.61	$ 0.12	$ -	$ 0.28	$ 0.11	$ 1.56	$ 2.41	$ 1.68	$ 0.59	$ 0.97	$ 0.32	$ 0.20	$ 0.11	$ 0.98
10	12	$ 4.09	$ 1.43	$ 0.99	$ 2.34	$ 0.11	$ -	$ 0.26	$ 0.10	$ 1.72	$ 2.19	$ 1.73	$ 0.61	$ 1.11	$ 0.33	$ 0.17	$ 0.12	$ 1.15
11	12	$ 3.89	$ 1.55	$ 1.06	$ 2.21	$ 0.04	$ -	$ 0.25	$ 0.10	$ 1.78	$ 2.10	$ 1.49	$ 0.52	$ 1.26	$ 0.34	$ 0.17	$ 0.12	$ 1.31
12	12	$ 3.72	$ 1.67	$ 1.14	$ 2.14	$ 0.03	$ -	$ 0.24	$ 0.09	$ 1.74	$ 2.06	$ 1.45	$ 0.51	$ 1.23	$ 0.35	$ 0.18	$ 0.12	$ 1.28
13	12	$ 3.57	$ 1.78	$ 1.21	$ 2.11	$ 0.03	$ -	$ 0.24	$ 0.09	$ 1.67	$ 2.05	$ 1.42	$ 0.50	$ 1.18	$ 0.36	$ 0.19	$ 0.13	$ 1.23
14	12	$ 3.45	$ 1.89	$ 1.36	$ 2.05	$ 0.03	$ -	$ 0.23	$ 0.09	$ 1.58	$ 2.01	$ 1.36	$ 0.48	$ 1.11	$ 0.38	$ 0.19	$ 0.13	$ 1.16
15	12	$ 3.35	$ 2.00	$ 1.67	$ 1.85	$ 0.03	$ -	$ 0.23	$ 0.08	$ 1.48	$ 1.83	$ 1.28	$ 0.45	$ 1.03	$ 0.39	$ 0.18	$ 0.14	$ 1.10
16	12	$ 3.27	$ 2.09	$ 1.85	$ 1.83	$ 0.03	$ -	$ 0.23	$ 0.08	$ 1.34	$ 1.82	$ 1.17	$ 0.41	$ 0.93	$ 0.40	$ 0.18	$ 0.14	$ 1.01
17	12	$ 3.20	$ 2.19	$ 2.02	$ 1.63	$ 0.03	$ -	$ 0.23	$ 0.08	$ 1.39	$ 1.65	$ 1.23	$ 0.43	$ 0.96	$ 0.41	$ 0.16	$ 0.14	$ 1.06
18	12	$ 3.12	$ 2.27	$ 2.20	$ 1.43	$ 0.03	$ -	$ 0.23	$ 0.08	$ 1.43	$ 1.47	$ 1.28	$ 0.45	$ 0.98	$ 0.42	$ 0.13	$ 0.15	$ 1.12
19	12	$ 3.05	$ 2.34	$ 2.46	$ 1.14	$ 0.03	$ -	$ 0.23	$ 0.08	$ 1.46	$ 1.21	$ 1.32	$ 0.46	$ 1.00	$ 0.43	$ 0.10	$ 0.15	$ 1.17
20	12	$ 2.98	$ 2.39	$ 2.68	$ 0.89	$ 0.03	$ -	$ 0.23	$ 0.07	$ 1.48	$ 0.98	$ 1.36	$ 0.47	$ 1.01	$ 0.43	$ 0.07	$ 0.15	$ 1.22
21	12	$ 2.91	$ 2.43	$ 2.92	$ 0.61	$ 0.03	$ -	$ 0.23	$ 0.07	$ 1.49	$ 0.72	$ 1.37	$ 0.48	$ 1.01	$ 0.43	$ 0.04	$ 0.15	$ 1.26
22	12	$ 2.85	$ 2.46	$ 3.18	$ 0.31	$ 0.03	$ -	$ 0.23	$ 0.07	$ 1.49	$ 0.43	$ 1.37	$ 0.48	$ 1.01	$ 0.44	$ (0.00)	$ 0.15	$ 1.30
23	12	$ 2.78	$ 2.47	$ 3.44	$ (0.00)	$ 0.03	$ -	$ 0.23	$ 0.07	$ 1.48	$ 0.14	$ 1.34	$ 0.47	$ 1.01	$ 0.43	$ (0.04)	$ 0.15	$ 1.33
24	12	$ 2.71	$ 2.46	$ 3.74	$ (0.36)	$ 0.03	$ -	$ 0.24	$ 0.07	$ 1.46	$ (0.21)	$ 1.31	$ 0.46	$ 1.00	$ 0.43	$ (0.08)	$ 0.15	$ 1.36
25	12	$ 2.64	$ 2.43	$ 4.06	$ (0.73)	$ 0.02	$ -	$ 0.24	$ 0.07	$ 1.42	$ (0.58)	$ 1.27	$ 0.44	$ 0.98	$ 0.42	$ (0.12)	$ 0.15	$ 1.38
26	12	$ 2.58	$ 2.38	$ 4.34	$ (1.08)	$ 0.02	$ -	$ 0.24	$ 0.06	$ 1.37	$ (0.93)	$ 1.22	$ 0.43	$ 0.94	$ 0.42	$ (0.17)	$ 0.15	$ 1.38
27	12	$ 2.51	$ 2.31	$ 4.66	$ (1.48)	$ 0.02	$ -	$ 0.24	$ 0.06	$ 1.32	$ (1.33)	$ 1.17	$ 0.41	$ 0.91	$ 0.40	$ (0.21)	$ 0.14	$ 1.38
28	12	$ 2.44	$ 2.23	$ 4.94	$ (1.84)	$ 0.02	$ -	$ 0.24	$ 0.06	$ 1.25	$ (1.70)	$ 1.11	$ 0.39	$ 0.86	$ 0.39	$ (0.26)	$ 0.14	$ 1.37
29	12	$ 2.38	$ 2.11	$ 5.29	$ (2.29)	$ 0.02	$ -	$ 0.25	$ 0.06	$ 1.17	$ (2.17)	$ 1.04	$ 0.37	$ 0.80	$ 0.37	$ (0.31)	$ 0.13	$ 1.36
30	12	$ 2.31	$ 1.98	$ 5.63	$ (2.76)	$ 0.02	$ -	$ 0.25	$ 0.06	$ 1.09	$ (2.66)	$ 0.98	$ 0.34	$ 0.74	$ 0.35	$ (5.70)	$ 0.12	$ 6.67

Annual Profit Results
Statutory Results

45 Male Standard Nonsmoker

Risk Classification	Male Std NS
Issue Age	45
Premium	$13.50
ROI	21.77%
Profit Margin	6.83%
Weighted ROE	25.58%

																		Target Surplus Adjustments			
Policy Year	Policy Month	Prem	Inv Inc	Claims Incurred	Stat Reserve Incr	Comms	Acq	Main	Prem Tax	Book Profit Before FIT	Tax Reserve Incr	Taxable Profit	FIT	Book Profit After FIT	InvInc	Target Surplus Incr	FIT on Target Surplus	Distr Earn
1	12	$ 13.21	$ (0.01)	$ 1.60	$ -	$ 13.29	$ 1.16	$ 0.71	$ 0.33	$ (3.89)	$ -	$ (2.97)	$ (1.04)	$ (2.85)	$ 0.38	$ 6.04	$ 0.13	$ (8.64)
2	12	$ 11.33	$ 0.05	$ 1.64	$ -	$ 0.32	$ -	$ 0.61	$ 0.28	$ 8.52	$ -	$ 9.20	$ 3.22	$ 5.30	$ 0.36	$ (0.72)	$ 0.13	$ 6.25
3	12	$ 9.94	$ 0.20	$ 1.69	$ 6.18	$ 0.28	$ -	$ 0.54	$ 0.25	$ 1.20	$ 5.66	$ 2.22	$ 0.78	$ 0.42	$ 0.34	$ 0.14	$ 0.12	$ 0.50
4	12	$ 8.92	$ 0.49	$ 1.87	$ 4.93	$ 0.25	$ -	$ 0.49	$ 0.22	$ 1.64	$ 4.55	$ 2.37	$ 0.83	$ 0.81	$ 0.35	$ 0.16	$ 0.12	$ 0.88
5	12	$ 8.19	$ 0.73	$ 2.09	$ 4.16	$ 0.23	$ -	$ 0.46	$ 0.20	$ 1.77	$ 3.86	$ 2.30	$ 0.81	$ 0.97	$ 0.36	$ 0.19	$ 0.13	$ 1.01
6	12	$ 7.67	$ 0.94	$ 2.34	$ 3.73	$ 0.22	$ -	$ 0.44	$ 0.19	$ 1.70	$ 3.49	$ 2.08	$ 0.73	$ 0.97	$ 0.37	$ 0.24	$ 0.13	$ 0.98
7	12	$ 7.27	$ 1.13	$ 2.48	$ 3.22	$ 0.21	$ -	$ 0.42	$ 0.18	$ 1.89	$ 3.05	$ 2.11	$ 0.74	$ 1.15	$ 0.39	$ 0.19	$ 0.14	$ 1.21
8	12	$ 6.89	$ 1.29	$ 2.62	$ 2.75	$ 0.20	$ -	$ 0.40	$ 0.17	$ 2.04	$ 2.63	$ 2.13	$ 0.75	$ 1.30	$ 0.40	$ 0.14	$ 0.14	$ 1.42
9	12	$ 6.53	$ 1.42	$ 2.83	$ 2.22	$ 0.19	$ -	$ 0.39	$ 0.16	$ 2.17	$ 2.15	$ 2.13	$ 0.74	$ 1.42	$ 0.40	$ 0.09	$ 0.14	$ 1.60
10	12	$ 6.19	$ 1.53	$ 2.99	$ 1.76	$ 0.18	$ -	$ 0.38	$ 0.15	$ 2.26	$ 1.73	$ 2.10	$ 0.74	$ 1.52	$ 0.41	$ 0.04	$ 0.14	$ 1.75
11	12	$ 5.87	$ 1.61	$ 3.16	$ 1.47	$ 0.06	$ -	$ 0.36	$ 0.15	$ 2.28	$ 1.47	$ 1.68	$ 0.59	$ 1.70	$ 0.41	$ 0.03	$ 0.14	$ 1.93
12	12	$ 5.60	$ 1.68	$ 3.36	$ 1.21	$ 0.05	$ -	$ 0.35	$ 0.14	$ 2.16	$ 1.23	$ 1.58	$ 0.55	$ 1.61	$ 0.41	$ 0.02	$ 0.14	$ 1.86
13	12	$ 5.37	$ 1.74	$ 3.57	$ 0.99	$ 0.05	$ -	$ 0.35	$ 0.13	$ 2.02	$ 1.03	$ 1.51	$ 0.53	$ 1.49	$ 0.41	$ 0.01	$ 0.14	$ 1.75
14	12	$ 5.17	$ 1.79	$ 3.84	$ 0.74	$ 0.05	$ -	$ 0.34	$ 0.13	$ 1.86	$ 0.79	$ 1.41	$ 0.49	$ 1.37	$ 0.41	$ (0.01)	$ 0.14	$ 1.64
15	12	$ 5.00	$ 1.81	$ 4.56	$ 0.05	$ 0.05	$ -	$ 0.35	$ 0.13	$ 1.69	$ 0.11	$ 1.30	$ 0.46	$ 1.23	$ 0.41	$ (0.07)	$ 0.14	$ 1.57
16	12	$ 4.86	$ 1.81	$ 4.87	$ (0.20)	$ 0.05	$ -	$ 0.35	$ 0.12	$ 1.49	$ (0.14)	$ 1.16	$ 0.41	$ 1.08	$ 0.41	$ (0.09)	$ 0.14	$ 1.44
17	12	$ 4.73	$ 1.78	$ 5.23	$ (0.68)	$ 0.04	$ -	$ 0.35	$ 0.12	$ 1.45	$ (0.62)	$ 1.18	$ 0.41	$ 1.04	$ 0.40	$ (0.15)	$ 0.14	$ 1.45
18	12	$ 4.61	$ 1.74	$ 5.55	$ (1.12)	$ 0.04	$ -	$ 0.35	$ 0.12	$ 1.40	$ (1.06)	$ 1.19	$ 0.42	$ 0.98	$ 0.39	$ (0.20)	$ 0.14	$ 1.44
19	12	$ 4.48	$ 1.66	$ 5.95	$ (1.65)	$ 0.04	$ -	$ 0.35	$ 0.11	$ 1.34	$ (1.61)	$ 1.19	$ 0.42	$ 0.92	$ 0.37	$ (0.27)	$ 0.13	$ 1.43
20	12	$ 4.35	$ 1.56	$ 6.35	$ (2.21)	$ 0.04	$ -	$ 0.35	$ 0.11	$ 1.27	$ (2.18)	$ 1.19	$ 0.42	$ 0.85	$ 0.35	$ (0.30)	$ 0.12	$ 1.38
21	12	$ 4.23	$ 1.52	$ 3.35	$ 0.85	$ 0.04	$ -	$ 0.28	$ 0.11	$ 1.12	$ 0.88	$ 1.07	$ 0.37	$ 0.74	$ 0.35	$ 0.03	$ 0.12	$ 0.93
22	12	$ 4.09	$ 1.55	$ 3.52	$ 0.60	$ 0.04	$ -	$ 0.28	$ 0.10	$ 1.10	$ 0.65	$ 1.05	$ 0.37	$ 0.73	$ 0.35	$ 0.00	$ 0.12	$ 0.95
23	12	$ 3.96	$ 1.58	$ 3.68	$ 0.37	$ 0.04	$ -	$ 0.28	$ 0.10	$ 1.08	$ 0.43	$ 1.02	$ 0.36	$ 0.73	$ 0.35	$ (0.03)	$ 0.12	$ 0.98
24	12	$ 3.82	$ 1.59	$ 3.85	$ 0.11	$ 0.04	$ -	$ 0.27	$ 0.10	$ 1.05	$ 0.19	$ 0.98	$ 0.34	$ 0.71	$ 0.34	$ (0.06)	$ 0.12	$ 0.99
25	12	$ 3.68	$ 1.59	$ 4.00	$ (0.13)	$ 0.03	$ -	$ 0.27	$ 0.09	$ 1.02	$ (0.05)	$ 0.93	$ 0.33	$ 0.69	$ 0.34	$ (0.09)	$ 0.12	$ 1.00
26	12	$ 3.54	$ 1.58	$ 4.15	$ (0.41)	$ 0.03	$ -	$ 0.26	$ 0.09	$ 0.98	$ (0.31)	$ 0.89	$ 0.31	$ 0.67	$ 0.33	$ (0.12)	$ 0.12	$ 1.01
27	12	$ 3.39	$ 1.55	$ 4.28	$ (0.62)	$ 0.03	$ -	$ 0.26	$ 0.08	$ 0.91	$ (0.52)	$ 0.81	$ 0.28	$ 0.63	$ 0.32	$ (0.15)	$ 0.11	$ 0.99
28	12	$ 3.24	$ 1.51	$ 4.44	$ (0.89)	$ 0.03	$ -	$ 0.25	$ 0.08	$ 0.84	$ (0.78)	$ 0.73	$ 0.26	$ 0.58	$ 0.31	$ (0.18)	$ 0.11	$ 0.97
29	12	$ 3.09	$ 1.45	$ 4.60	$ (1.15)	$ 0.03	$ -	$ 0.25	$ 0.08	$ 0.75	$ (1.05)	$ 0.64	$ 0.23	$ 0.52	$ 0.30	$ (0.22)	$ 0.11	$ 0.93
30	12	$ 2.94	$ 1.39	$ 4.70	$ (1.37)	$ 0.03	$ -	$ 0.24	$ 0.07	$ 0.65	$ (1.27)	$ 0.55	$ 0.19	$ 0.46	$ 0.29	$ (4.64)	$ 0.10	$ 5.29

Annual Profit Results
Statutory Results

55 Male Standard Nonsmoker

Risk Classification	Male Std NS
Issue Age	55
Premium	$18.63
ROI	19.71%
Profit Margin	5.63%
Weighted ROE	22.16%

																		Target Surplus Adjustments			
Policy Year	Policy Month	Prem	Inv Inc	Claims Incurred	Stat Reserve Incr	Comms	Acq	Main	Prem Tax	Book Profit Before FIT	Tax Reserve Incr	Taxable Profit	FIT	Book Profit After FIT	InvInc	Target Surplus Incr	FIT on Target Surplus	Distr Earn
1	12	$ 18.19	$ (0.01)	$ 4.55	$ -	$ 18.56	$ 1.16	$ 0.92	$ 0.45	$ (7.47)	$ -	$ (6.20)	$ (2.17)	$ (5.30)	$ 0.52	$ 8.44	$ 0.18	$ (13.40)
2	12	$ 15.98	$ 0.06	$ 4.75	$ -	$ 0.46	$ -	$ 0.82	$ 0.40	$ 9.61	$ -	$ 10.58	$ 3.70	$ 5.90	$ 0.50	$ (0.90)	$ 0.18	$ 7.13
3	12	$ 14.27	$ 0.19	$ 4.99	$ 5.22	$ 0.41	$ -	$ 0.75	$ 0.36	$ 2.73	$ 4.93	$ 3.75	$ 1.31	$ 1.42	$ 0.47	$ (0.13)	$ 0.17	$ 1.86
4	12	$ 12.95	$ 0.43	$ 5.38	$ 3.72	$ 0.37	$ -	$ 0.70	$ 0.32	$ 2.89	$ 3.51	$ 3.62	$ 1.27	$ 1.62	$ 0.46	$ (0.14)	$ 0.16	$ 2.06
5	12	$ 11.94	$ 0.59	$ 5.84	$ 2.54	$ 0.34	$ -	$ 0.66	$ 0.30	$ 2.85	$ 2.40	$ 3.36	$ 1.17	$ 1.68	$ 0.46	$ (0.14)	$ 0.16	$ 2.11
6	12	$ 11.19	$ 0.70	$ 6.34	$ 1.62	$ 0.32	$ -	$ 0.64	$ 0.28	$ 2.69	$ 1.50	$ 3.02	$ 1.06	$ 1.63	$ 0.45	$ (0.13)	$ 0.16	$ 2.06
7	12	$ 10.56	$ 0.77	$ 6.61	$ 0.87	$ 0.31	$ -	$ 0.61	$ 0.26	$ 2.66	$ 0.78	$ 2.84	$ 0.99	$ 1.67	$ 0.44	$ (0.21)	$ 0.15	$ 2.16
8	12	$ 9.97	$ 0.80	$ 6.81	$ 0.23	$ 0.29	$ -	$ 0.59	$ 0.25	$ 2.59	$ 0.16	$ 2.62	$ 0.92	$ 1.67	$ 0.42	$ (0.27)	$ 0.15	$ 2.22
9	12	$ 9.40	$ 0.79	$ 7.09	$ (0.47)	$ 0.27	$ -	$ 0.57	$ 0.23	$ 2.49	$ (0.53)	$ 2.40	$ 0.84	$ 1.65	$ 0.40	$ (0.34)	$ 0.14	$ 2.26
10	12	$ 8.85	$ 0.74	$ 7.33	$ (1.12)	$ 0.26	$ -	$ 0.55	$ 0.22	$ 2.36	$ (1.18)	$ 2.15	$ 0.75	$ 1.60	$ 0.38	$ (0.37)	$ 0.13	$ 2.22
11	12	$ 8.34	$ 0.77	$ 3.76	$ 2.34	$ 0.08	$ -	$ 0.45	$ 0.21	$ 2.27	$ 2.29	$ 1.45	$ 0.51	$ 1.76	$ 0.37	$ 0.04	$ 0.13	$ 1.96
12	12	$ 7.90	$ 0.88	$ 3.87	$ 2.00	$ 0.08	$ -	$ 0.44	$ 0.20	$ 2.20	$ 1.99	$ 1.40	$ 0.49	$ 1.71	$ 0.37	$ 0.03	$ 0.13	$ 1.92
13	12	$ 7.50	$ 0.98	$ 3.97	$ 1.73	$ 0.07	$ -	$ 0.42	$ 0.19	$ 2.10	$ 1.74	$ 1.41	$ 0.49	$ 1.61	$ 0.37	$ 0.02	$ 0.13	$ 1.83
14	12	$ 7.15	$ 1.07	$ 4.10	$ 1.47	$ 0.07	$ -	$ 0.41	$ 0.18	$ 1.98	$ 1.50	$ 1.37	$ 0.48	$ 1.50	$ 0.37	$ 0.00	$ 0.13	$ 1.74
15	12	$ 6.83	$ 1.13	$ 4.65	$ 0.81	$ 0.07	$ -	$ 0.40	$ 0.17	$ 1.86	$ 0.86	$ 1.33	$ 0.47	$ 1.39	$ 0.37	$ (0.05)	$ 0.13	$ 1.69
16	12	$ 6.55	$ 1.16	$ 4.83	$ 0.56	$ 0.06	$ -	$ 0.39	$ 0.16	$ 1.70	$ 0.62	$ 1.26	$ 0.44	$ 1.26	$ 0.37	$ (0.07)	$ 0.13	$ 1.57
17	12	$ 6.27	$ 1.19	$ 4.97	$ 0.26	$ 0.06	$ -	$ 0.38	$ 0.16	$ 1.63	$ 0.33	$ 1.26	$ 0.44	$ 1.19	$ 0.36	$ (0.11)	$ 0.13	$ 1.53
18	12	$ 6.00	$ 1.19	$ 5.15	$ (0.09)	$ 0.06	$ -	$ 0.38	$ 0.15	$ 1.54	$ (0.01)	$ 1.24	$ 0.43	$ 1.11	$ 0.35	$ (0.15)	$ 0.12	$ 1.49
19	12	$ 5.72	$ 1.18	$ 5.33	$ (0.44)	$ 0.06	$ -	$ 0.37	$ 0.14	$ 1.44	$ (0.36)	$ 1.21	$ 0.42	$ 1.02	$ 0.34	$ (0.20)	$ 0.12	$ 1.44
20	12	$ 5.43	$ 1.14	$ 5.46	$ (0.76)	$ 0.05	$ -	$ 0.36	$ 0.14	$ 1.33	$ (0.67)	$ 1.17	$ 0.41	$ 0.92	$ 0.33	$ (0.24)	$ 0.12	$ 1.37
21	12	$ 5.15	$ 1.10	$ 5.47	$ (0.96)	$ 0.05	$ -	$ 0.34	$ 0.13	$ 1.21	$ (0.87)	$ 1.11	$ 0.39	$ 0.83	$ 0.31	$ (0.26)	$ 0.11	$ 1.29
22	12	$ 4.86	$ 1.04	$ 5.47	$ (1.17)	$ 0.05	$ -	$ 0.33	$ 0.12	$ 1.10	$ (1.09)	$ 1.02	$ 0.36	$ 0.74	$ 0.30	$ (0.29)	$ 0.10	$ 1.23
23	12	$ 4.56	$ 0.97	$ 5.45	$ (1.38)	$ 0.04	$ -	$ 0.32	$ 0.11	$ 0.99	$ (1.30)	$ 0.91	$ 0.32	$ 0.67	$ 0.28	$ (0.31)	$ 0.10	$ 1.17
24	12	$ 4.27	$ 0.89	$ 5.38	$ (1.57)	$ 0.04	$ -	$ 0.30	$ 0.11	$ 0.89	$ (1.49)	$ 0.82	$ 0.29	$ 0.60	$ 0.26	$ (0.34)	$ 0.09	$ 1.11
25	12	$ 3.97	$ 0.80	$ 5.35	$ (1.80)	$ 0.04	$ -	$ 0.29	$ 0.10	$ 0.80	$ (1.74)	$ 0.73	$ 0.26	$ 0.54	$ 0.23	$ (0.37)	$ 0.08	$ 1.06
26	12	$ 3.68	$ 0.70	$ 5.22	$ (1.95)	$ 0.04	$ -	$ 0.27	$ 0.09	$ 0.71	$ (1.91)	$ 0.66	$ 0.23	$ 0.48	$ 0.21	$ (0.38)	$ 0.07	$ 0.99
27	12	$ 3.38	$ 0.61	$ 4.34	$ (1.31)	$ 0.03	$ -	$ 0.24	$ 0.08	$ 0.60	$ (1.27)	$ 0.56	$ 0.19	$ 0.40	$ 0.19	$ (0.30)	$ 0.07	$ 0.83
28	12	$ 3.09	$ 0.54	$ 4.04	$ (1.24)	$ 0.03	$ -	$ 0.22	$ 0.08	$ 0.50	$ (1.20)	$ 0.47	$ 0.16	$ 0.34	$ 0.17	$ (0.29)	$ 0.06	$ 0.74
29	12	$ 2.81	$ 0.47	$ 3.72	$ (1.16)	$ 0.03	$ -	$ 0.20	$ 0.07	$ 0.42	$ (1.13)	$ 0.39	$ 0.14	$ 0.28	$ 0.15	$ (0.28)	$ 0.05	$ 0.66
30	12	$ 2.52	$ 0.41	$ 3.39	$ (1.07)	$ 0.02	$ -	$ 0.18	$ 0.06	$ 0.34	$ (1.05)	$ 0.32	$ 0.11	$ 0.23	$ 0.14	$ (2.27)	$ 0.05	$ 2.59

Appendix C
GAAP Results

35 Male Standard Nonsmoker

Risk Classification	Male Std NS
Issue Age	35
Premium	$9.44
ROI	20.75%
Profit Margin	7.66%
Weighted ROE	23.14%

												Federal Income Tax		
Policy Year	Policy Month	Book Profit Before FIT	Stat Reserve Increase	InvInc on Stat Reserves	Benefit Reserve Increase	DAC Increase	InvInc on Net Reserve	GAAP Book Profit	Inv Inc on GAAP Req Surplus	GAAP Earnings Before FIT	Current	Deferred	GAAP Earnings After FIT
1	12	$ (2.32)	$ -	$ -	$ 5.24	$ 9.28	$ (0.13)	$ 1.58	$ 0.37	$ 1.96	$ (0.58)	$ 1.14	$ 1.40
2	12	$ 6.42	$ -	$ -	$ 4.47	$ (0.48)	$ (0.09)	$ 1.38	$ 0.34	$ 1.72	$ 2.41	$ (1.93)	$ 1.24
3	12	$ 0.43	$ 5.13	$ 0.13	$ 3.92	$ (0.38)	$ 0.16	$ 1.28	$ 0.25	$ 1.54	$ 0.51	$ (0.06)	$ 1.09
4	12	$ 0.90	$ 4.17	$ 0.38	$ 3.52	$ (0.32)	$ 0.38	$ 1.23	$ 0.31	$ 1.53	$ 0.58	$ (0.15)	$ 1.10
5	12	$ 1.05	$ 3.68	$ 0.59	$ 3.23	$ (0.27)	$ 0.57	$ 1.21	$ 0.35	$ 1.55	$ 0.57	$ (0.15)	$ 1.13
6	12	$ 0.98	$ 3.54	$ 0.79	$ 3.03	$ (0.25)	$ 0.75	$ 1.21	$ 0.38	$ 1.60	$ 0.51	$ (0.08)	$ 1.17
7	12	$ 1.19	$ 3.22	$ 0.97	$ 2.91	$ (0.23)	$ 0.93	$ 1.23	$ 0.42	$ 1.65	$ 0.54	$ (0.11)	$ 1.22
8	12	$ 1.39	$ 2.89	$ 1.13	$ 2.78	$ (0.21)	$ 1.09	$ 1.25	$ 0.44	$ 1.69	$ 0.57	$ (0.13)	$ 1.25
9	12	$ 1.56	$ 2.61	$ 1.28	$ 2.67	$ (0.19)	$ 1.25	$ 1.27	$ 0.45	$ 1.72	$ 0.59	$ (0.14)	$ 1.28
10	12	$ 1.72	$ 2.34	$ 1.41	$ 2.57	$ (0.18)	$ 1.40	$ 1.29	$ 0.45	$ 1.74	$ 0.61	$ (0.16)	$ 1.29
11	12	$ 1.78	$ 2.21	$ 1.54	$ 2.46	$ (0.24)	$ 1.55	$ 1.31	$ 0.44	$ 1.75	$ 0.52	$ (0.06)	$ 1.29
12	12	$ 1.74	$ 2.14	$ 1.65	$ 2.35	$ (0.23)	$ 1.69	$ 1.34	$ 0.43	$ 1.76	$ 0.51	$ (0.04)	$ 1.29
13	12	$ 1.67	$ 2.11	$ 1.77	$ 2.26	$ (0.22)	$ 1.82	$ 1.36	$ 0.41	$ 1.78	$ 0.50	$ (0.02)	$ 1.30
14	12	$ 1.58	$ 2.05	$ 1.88	$ 2.10	$ (0.21)	$ 1.95	$ 1.40	$ 0.41	$ 1.80	$ 0.48	$ 0.01	$ 1.31
15	12	$ 1.48	$ 1.85	$ 1.98	$ 1.77	$ (0.20)	$ 2.07	$ 1.44	$ 0.40	$ 1.84	$ 0.45	$ 0.06	$ 1.34
16	12	$ 1.34	$ 1.83	$ 2.08	$ 1.59	$ (0.20)	$ 2.17	$ 1.47	$ 0.41	$ 1.88	$ 0.41	$ 0.10	$ 1.36
17	12	$ 1.39	$ 1.63	$ 2.18	$ 1.41	$ (0.20)	$ 2.26	$ 1.50	$ 0.41	$ 1.91	$ 0.43	$ 0.09	$ 1.39
18	12	$ 1.43	$ 1.43	$ 2.26	$ 1.21	$ (0.20)	$ 2.34	$ 1.53	$ 0.42	$ 1.95	$ 0.45	$ 0.09	$ 1.41
19	12	$ 1.46	$ 1.14	$ 2.33	$ 0.93	$ (0.19)	$ 2.41	$ 1.56	$ 0.42	$ 1.98	$ 0.46	$ 0.08	$ 1.43
20	12	$ 1.48	$ 0.89	$ 2.38	$ 0.68	$ (0.19)	$ 2.47	$ 1.58	$ 0.42	$ 2.00	$ 0.47	$ 0.08	$ 1.45
21	12	$ 1.49	$ 0.61	$ 2.42	$ 0.40	$ (0.19)	$ 2.50	$ 1.59	$ 0.42	$ 2.01	$ 0.48	$ 0.08	$ 1.46
22	12	$ 1.49	$ 0.31	$ 2.45	$ 0.08	$ (0.19)	$ 2.53	$ 1.60	$ 0.42	$ 2.02	$ 0.48	$ 0.08	$ 1.46
23	12	$ 1.48	$ (0.00)	$ 2.46	$ (0.24)	$ (0.19)	$ 2.54	$ 1.61	$ 0.42	$ 2.03	$ 0.47	$ 0.09	$ 1.46
24	12	$ 1.46	$ (0.36)	$ 2.45	$ (0.62)	$ (0.19)	$ 2.52	$ 1.61	$ 0.41	$ 2.02	$ 0.46	$ 0.11	$ 1.46
25	12	$ 1.42	$ (0.73)	$ 2.42	$ (1.03)	$ (0.18)	$ 2.49	$ 1.61	$ 0.40	$ 2.01	$ 0.44	$ 0.12	$ 1.45
26	12	$ 1.37	$ (1.08)	$ 2.37	$ (1.42)	$ (0.18)	$ 2.43	$ 1.59	$ 0.39	$ 1.99	$ 0.43	$ 0.13	$ 1.43
27	12	$ 1.32	$ (1.48)	$ 2.30	$ (1.87)	$ (0.18)	$ 2.36	$ 1.57	$ 0.38	$ 1.96	$ 0.41	$ 0.14	$ 1.41
28	12	$ 1.25	$ (1.84)	$ 2.22	$ (2.27)	$ (0.18)	$ 2.26	$ 1.54	$ 0.37	$ 1.92	$ 0.39	$ 0.15	$ 1.38
29	12	$ 1.17	$ (2.29)	$ 2.11	$ (2.78)	$ (0.18)	$ 2.13	$ 1.50	$ 0.36	$ 1.87	$ 0.37	$ 0.16	$ 1.34
30	12	$ 1.09	$ (2.76)	$ 1.97	$ (3.30)	$ (0.18)	$ 1.98	$ 1.46	$ 0.35	$ 1.81	$ 0.34	$ 0.17	$ 1.30

GAAP Results

45 Male Standard Nonsmoker

Risk Classification	Male Std NS
Issue Age	45
Premium	$13.50
ROI	21.77%
Profit Margin	6.83%
Weighted ROE	25.58%

												Federal Income Tax		
Policy Year	Policy Month	Book Profit Before FIT	Stat Reserve Increase	InvInc on Stat Reserves	Benefit Reserve Increase	DAC Increase	InvInc on Net Reserve	GAAP Book Profit	Inv Inc on GAAP Req Surplus	GAAP Earnings Before FIT	Current	Deferred	GAAP Earnings After FIT
1	12	$ (3.89)	$ -	$ -	$ 6.94	$ 12.96	$ (0.18)	$ 1.95	$ 0.53	$ 2.48	$ (1.04)	$ 1.72	$ 1.80
2	12	$ 8.52	$ -	$ -	$ 5.90	$ (0.70)	$ (0.16)	$ 1.76	$ 0.51	$ 2.27	$ 3.22	$ (2.60)	$ 1.66
3	12	$ 1.20	$ 6.18	$ 0.16	$ 5.14	$ (0.58)	$ 0.17	$ 1.67	$ 0.38	$ 2.05	$ 0.78	$ (0.19)	$ 1.47
4	12	$ 1.64	$ 4.93	$ 0.46	$ 4.44	$ (0.50)	$ 0.46	$ 1.63	$ 0.42	$ 2.05	$ 0.83	$ (0.26)	$ 1.48
5	12	$ 1.77	$ 4.16	$ 0.70	$ 3.87	$ (0.44)	$ 0.71	$ 1.62	$ 0.44	$ 2.06	$ 0.81	$ (0.24)	$ 1.49
6	12	$ 1.70	$ 3.73	$ 0.91	$ 3.40	$ (0.40)	$ 0.93	$ 1.64	$ 0.46	$ 2.10	$ 0.73	$ (0.15)	$ 1.52
7	12	$ 1.89	$ 3.22	$ 1.10	$ 3.10	$ (0.38)	$ 1.12	$ 1.66	$ 0.47	$ 2.13	$ 0.74	$ (0.16)	$ 1.55
8	12	$ 2.04	$ 2.75	$ 1.26	$ 2.81	$ (0.35)	$ 1.30	$ 1.67	$ 0.47	$ 2.14	$ 0.75	$ (0.16)	$ 1.56
9	12	$ 2.17	$ 2.22	$ 1.39	$ 2.44	$ (0.33)	$ 1.46	$ 1.69	$ 0.46	$ 2.14	$ 0.74	$ (0.15)	$ 1.55
10	12	$ 2.26	$ 1.76	$ 1.50	$ 2.12	$ (0.30)	$ 1.60	$ 1.69	$ 0.43	$ 2.13	$ 0.74	$ (0.14)	$ 1.53
11	12	$ 2.28	$ 1.47	$ 1.59	$ 1.80	$ (0.40)	$ 1.73	$ 1.70	$ 0.40	$ 2.10	$ 0.59	$ 0.01	$ 1.50
12	12	$ 2.16	$ 1.21	$ 1.66	$ 1.46	$ (0.38)	$ 1.84	$ 1.71	$ 0.35	$ 2.06	$ 0.55	$ 0.05	$ 1.46
13	12	$ 2.02	$ 0.99	$ 1.72	$ 1.13	$ (0.36)	$ 1.93	$ 1.72	$ 0.31	$ 2.03	$ 0.53	$ 0.08	$ 1.43
14	12	$ 1.86	$ 0.74	$ 1.77	$ 0.74	$ (0.35)	$ 2.00	$ 1.73	$ 0.28	$ 2.01	$ 0.49	$ 0.11	$ 1.41
15	12	$ 1.69	$ 0.05	$ 1.79	$ (0.12)	$ (0.34)	$ 2.03	$ 1.76	$ 0.25	$ 2.01	$ 0.46	$ 0.16	$ 1.40
16	12	$ 1.49	$ (0.20)	$ 1.79	$ (0.56)	$ (0.34)	$ 2.03	$ 1.76	$ 0.23	$ 1.99	$ 0.41	$ 0.21	$ 1.37
17	12	$ 1.45	$ (0.68)	$ 1.76	$ (1.07)	$ (0.33)	$ 2.01	$ 1.75	$ 0.21	$ 1.97	$ 0.41	$ 0.20	$ 1.35
18	12	$ 1.40	$ (1.12)	$ 1.72	$ (1.54)	$ (0.33)	$ 1.96	$ 1.74	$ 0.19	$ 1.93	$ 0.42	$ 0.19	$ 1.32
19	12	$ 1.34	$ (1.65)	$ 1.64	$ (2.12)	$ (0.33)	$ 1.88	$ 1.71	$ 0.17	$ 1.89	$ 0.42	$ 0.18	$ 1.29
20	12	$ 1.27	$ (2.21)	$ 1.54	$ (2.71)	$ (0.32)	$ 1.77	$ 1.68	$ 0.15	$ 1.83	$ 0.42	$ 0.17	$ 1.24
21	12	$ 1.12	$ 0.85	$ 1.50	$ 0.41	$ (0.32)	$ 1.72	$ 1.46	$ 0.15	$ 1.60	$ 0.37	$ 0.14	$ 1.09
22	12	$ 1.10	$ 0.60	$ 1.54	$ 0.14	$ (0.31)	$ 1.75	$ 1.46	$ 0.15	$ 1.61	$ 0.37	$ 0.14	$ 1.10
23	12	$ 1.08	$ 0.37	$ 1.56	$ (0.11)	$ (0.31)	$ 1.77	$ 1.46	$ 0.15	$ 1.60	$ 0.36	$ 0.15	$ 1.09
24	12	$ 1.05	$ 0.11	$ 1.58	$ (0.39)	$ (0.30)	$ 1.77	$ 1.45	$ 0.15	$ 1.59	$ 0.34	$ 0.16	$ 1.09
25	12	$ 1.02	$ (0.13)	$ 1.58	$ (0.66)	$ (0.30)	$ 1.76	$ 1.43	$ 0.14	$ 1.57	$ 0.33	$ 0.18	$ 1.07
26	12	$ 0.98	$ (0.41)	$ 1.56	$ (0.95)	$ (0.29)	$ 1.73	$ 1.41	$ 0.14	$ 1.55	$ 0.31	$ 0.18	$ 1.06
27	12	$ 0.91	$ (0.62)	$ 1.54	$ (1.22)	$ (0.28)	$ 1.69	$ 1.38	$ 0.14	$ 1.52	$ 0.28	$ 0.20	$ 1.03
28	12	$ 0.84	$ (0.89)	$ 1.50	$ (1.53)	$ (0.27)	$ 1.63	$ 1.34	$ 0.14	$ 1.48	$ 0.26	$ 0.21	$ 1.01
29	12	$ 0.75	$ (1.15)	$ 1.44	$ (1.86)	$ (0.26)	$ 1.56	$ 1.30	$ 0.14	$ 1.44	$ 0.23	$ 0.23	$ 0.98
30	12	$ 0.65	$ (1.37)	$ 1.37	$ (2.14)	$ (0.26)	$ 1.46	$ 1.25	$ 0.14	$ 1.39	$ 0.19	$ 0.25	$ 0.95

GAAP Results

55 Male Standard Nonsmoker

Risk Classification	Male Std NS
Issue Age	55
Premium	$18.63
ROI	19.71%
Profit Margin	5.63%
Weighted ROE	22.16%

												Federal Income Tax		
Policy Year	Policy Month	Book Profit Before FIT	Stat Reserve Increase	InvInc on Stat Reserves	Benefit Reserve Increase	DAC Increase	InvInc on Net Reserve	GAAP Book Profit	Inv Inc on GAAP Req Surplus	GAAP Earnings Before FIT	Current	Deferred	GAAP Earnings After FIT
1	12	$ (7.47)	$ -	$ -	$ 7.18	$ 17.56	$ (0.29)	$ 2.62	$ 0.76	$ 3.38	$ (2.17)	$ 3.09	$ 2.46
2	12	$ 9.61	$ -	$ -	$ 5.73	$ (1.09)	$ (0.39)	$ 2.40	$ 0.85	$ 3.25	$ 3.70	$ (2.86)	$ 2.41
3	12	$ 2.73	$ 5.22	$ 0.13	$ 4.52	$ (0.95)	$ (0.06)	$ 2.29	$ 0.69	$ 2.99	$ 1.31	$ (0.51)	$ 2.18
4	12	$ 2.89	$ 3.72	$ 0.37	$ 3.38	$ (0.84)	$ 0.21	$ 2.22	$ 0.69	$ 2.92	$ 1.27	$ (0.49)	$ 2.14
5	12	$ 2.85	$ 2.54	$ 0.54	$ 2.31	$ (0.76)	$ 0.40	$ 2.18	$ 0.68	$ 2.86	$ 1.17	$ (0.41)	$ 2.10
6	12	$ 2.69	$ 1.62	$ 0.66	$ 1.34	$ (0.71)	$ 0.54	$ 2.15	$ 0.66	$ 2.82	$ 1.06	$ (0.30)	$ 2.06
7	12	$ 2.66	$ 0.87	$ 0.72	$ 0.67	$ (0.66)	$ 0.64	$ 2.12	$ 0.64	$ 2.76	$ 0.99	$ (0.25)	$ 2.02
8	12	$ 2.59	$ 0.23	$ 0.76	$ 0.07	$ (0.62)	$ 0.69	$ 2.06	$ 0.61	$ 2.68	$ 0.92	$ (0.20)	$ 1.95
9	12	$ 2.49	$ (0.47)	$ 0.75	$ (0.61)	$ (0.58)	$ 0.71	$ 2.01	$ 0.57	$ 2.58	$ 0.84	$ (0.14)	$ 1.88
10	12	$ 2.36	$ (1.12)	$ 0.71	$ (1.27)	$ (0.55)	$ 0.69	$ 1.94	$ 0.53	$ 2.47	$ 0.75	$ (0.07)	$ 1.79
11	12	$ 2.27	$ 2.34	$ 0.73	$ 2.27	$ (0.67)	$ 0.74	$ 1.67	$ 0.49	$ 2.16	$ 0.51	$ 0.08	$ 1.58
12	12	$ 2.20	$ 2.00	$ 0.85	$ 1.94	$ (0.64)	$ 0.89	$ 1.67	$ 0.45	$ 2.12	$ 0.49	$ 0.09	$ 1.53
13	12	$ 2.10	$ 1.73	$ 0.95	$ 1.63	$ (0.61)	$ 1.02	$ 1.66	$ 0.41	$ 2.07	$ 0.49	$ 0.09	$ 1.49
14	12	$ 1.98	$ 1.47	$ 1.04	$ 1.30	$ (0.59)	$ 1.14	$ 1.66	$ 0.38	$ 2.04	$ 0.48	$ 0.10	$ 1.46
15	12	$ 1.86	$ 0.81	$ 1.10	$ 0.53	$ (0.57)	$ 1.22	$ 1.68	$ 0.34	$ 2.02	$ 0.47	$ 0.12	$ 1.44
16	12	$ 1.70	$ 0.56	$ 1.14	$ 0.17	$ (0.56)	$ 1.27	$ 1.67	$ 0.32	$ 1.98	$ 0.44	$ 0.14	$ 1.40
17	12	$ 1.63	$ 0.26	$ 1.16	$ (0.16)	$ (0.54)	$ 1.30	$ 1.65	$ 0.29	$ 1.94	$ 0.44	$ 0.14	$ 1.37
18	12	$ 1.54	$ (0.09)	$ 1.17	$ (0.56)	$ (0.53)	$ 1.31	$ 1.62	$ 0.27	$ 1.90	$ 0.43	$ 0.13	$ 1.33
19	12	$ 1.44	$ (0.44)	$ 1.15	$ (0.96)	$ (0.51)	$ 1.30	$ 1.59	$ 0.25	$ 1.84	$ 0.42	$ 0.13	$ 1.28
20	12	$ 1.33	$ (0.76)	$ 1.12	$ (1.33)	$ (0.49)	$ 1.26	$ 1.55	$ 0.23	$ 1.78	$ 0.41	$ 0.13	$ 1.24
21	12	$ 1.21	$ (0.96)	$ 1.08	$ (1.57)	$ (0.47)	$ 1.21	$ 1.49	$ 0.21	$ 1.70	$ 0.39	$ 0.13	$ 1.18
22	12	$ 1.10	$ (1.17)	$ 1.02	$ (1.82)	$ (0.45)	$ 1.14	$ 1.42	$ 0.20	$ 1.62	$ 0.36	$ 0.14	$ 1.12
23	12	$ 0.99	$ (1.38)	$ 0.95	$ (2.06)	$ (0.43)	$ 1.06	$ 1.35	$ 0.18	$ 1.54	$ 0.32	$ 0.15	$ 1.06
24	12	$ 0.89	$ (1.57)	$ 0.87	$ (2.26)	$ (0.41)	$ 0.97	$ 1.27	$ 0.17	$ 1.44	$ 0.29	$ 0.16	$ 1.00
25	12	$ 0.80	$ (1.80)	$ 0.78	$ (2.50)	$ (0.38)	$ 0.87	$ 1.19	$ 0.16	$ 1.35	$ 0.26	$ 0.16	$ 0.93
26	12	$ 0.71	$ (1.95)	$ 0.68	$ (2.64)	$ (0.36)	$ 0.75	$ 1.10	$ 0.14	$ 1.24	$ 0.23	$ 0.16	$ 0.86
27	12	$ 0.60	$ (1.31)	$ 0.59	$ (1.97)	$ (0.34)	$ 0.64	$ 0.97	$ 0.13	$ 1.10	$ 0.19	$ 0.14	$ 0.76
28	12	$ 0.50	$ (1.24)	$ 0.52	$ (1.89)	$ (0.31)	$ 0.56	$ 0.88	$ 0.13	$ 1.00	$ 0.16	$ 0.14	$ 0.70
29	12	$ 0.42	$ (1.16)	$ 0.46	$ (1.80)	$ (0.29)	$ 0.47	$ 0.79	$ 0.12	$ 0.91	$ 0.14	$ 0.14	$ 0.63
30	12	$ 0.34	$ (1.07)	$ 0.40	$ (1.70)	$ (0.26)	$ 0.39	$ 0.70	$ 0.12	$ 0.82	$ 0.11	$ 0.13	$ 0.57