

A Comparison of Term Insurance Rates to Protection-Related Charges in Universal Life Insurance

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ABSTRACT

Universal life insurance is designed to be a "transparent" product. Policyholders make deposits into a fund, from which mortality and expense charges are deducted, with the balance accumulating at interest. Policyholders have the alternative of buying individual term insurance and investing through other media. This article shows that the mortality and expense charges in a sample of universal life policies are generally higher than the annual renewable term premiums charged by the same companies. This suggests that transparency may not be complete or that some other feature of universal life justifies the higher costs.

Universal life insurance "unbundles" the protection and savings elements of traditional whole life insurance products. The "unbundled" product consists of periodic deposits into a fund, from which mortality and expense charges are deducted, leaving a net fund, to which interest is credited. The mortality charges usually are assessed monthly. In essence, universal life insurance allows the policyowner to pursue a "buy-term-and-invest-the-difference" strategy within a single contract, but with the advantage of tax-deferred accumulation on the savings/investment element.¹

This study examines the cost of the protection element in a sample of universal life insurance contracts vis-à-vis the cost of protection through the same insurers' annual renewable term policies. Several researchers have studied the return on the investment fund in universal life insurance (Cherin and Hutchins, 1987; Chung and Skipper, 1987; D'Arcy and Lee, 1987). As with studies that have examined the rate of return in universal life

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¹ The Internal Revenue Code, in Section 264, places restrictions on life insurance contracts seeking tax-deferred status on the savings/investment element of the contract.

insurance, this study compares the cost of protection in universal life insurance to the cost of protection in an alternative policy. However, the focus of this study is not on universal life's implicit rate of return. The study's results provide insight into insurer universal life pricing practices and will be of value to insurance purchasers and other researchers.

Literature Review

We studied insurance contracts that combine death protection with savings to determine whether policyowners are better off purchasing the contract bundled or in separate parts (Cherin and Hutchins, 1987; Chung and Skipper, 1987; D'Arcy and Lee, 1987). Cherin and Hutchins (1987) examined the investment portion of a universal life insurance contract. They constructed an unbundled alternative to universal life comprised of annual renewable term insurance and an investment fund. Cherin and Hutchins solved for the interest rate that would cause the accumulation of the alternative fund to equal the investment accumulation in the universal life contract. Using the term insurance rates from a random sample of twenty insurers, they found that policyowners are typically better off purchasing a combination of annual renewable term insurance and an investment fund rather than buying universal life. They concluded that the substantial expense charges associated with universal life were the reason that it was outperformed by the unbundled alternative.

Chung and Skipper (1987) examined the correlation between the current interest rates for universal life contracts and the surrender values generated by the contracts. They found that the universal life policies with the highest current interest rates do not necessarily generate the highest surrender values. They concluded that, for holding periods of five years or less, surrender values are affected more by expense loadings, mortality charges, and surrender charges than by the current interest rate.

D'Arcy and Lee, like Cherin and Hutchins, studied the investment portions of both variable universal and universal life. They developed a model that compares universal life with a buy-term-and-invest-the-difference alternative. D'Arcy and Lee found that the tax advantages inherent in universal life contracts typically outweighed the expense and surrender charges when compared to alternative investments other than individual retirement accounts and other tax-deferred media. The D'Arcy and Lee model is able to vary the competitiveness of the death protection in the universal life when compared to term insurance. However, they assumed that the cost of death protection was the same in universal life as in term insurance. This study implicitly examines that assumption.

Methodology

Like the studies cited above, this study's methodology implicitly partitions the universal life contract into death protection and savings. All expense charges are allocated to the death protection part of the universal

life contract. This approach permits an implicit examination of insurers' pricing practices for the protection component of universal life. The assumption is that interest rates credited on the cash values of universal life policies would be competitive with alternative investment returns. An additional rationale for this assumption is that, while alternative no-load investments are available, a prospective universal life policyowner must incur both mortality and expense charges to have access to the savings portion of a universal life policy. Only the remainder of the premium—net of all mortality and expense charges—is credited with the current rate of interest.²

The analysis is based on published data for the life insurers shown in *Best's Flitcraft Compend* (1990) issuing both universal life and annual renewable term policies.³ The sample was narrowed to insurers that offer policies with a \$100,000 minimum death benefit (see Appendix). This minimum is the amount at which companies provide a distinct reduction in expense charges. A \$100,000 death benefit was used for all policies. The annual renewable term products typically carried a policy fee. Universal life policies had one or more of three distinct loading patterns: a policy constant, a per-thousand of coverage charge, and a percent of premium charge. Monthly mortality charges were multiplied by twelve and combined with the loading charges to provide a hypothetical annual universal life premium for the protection element only. The universal life premium is defined here to be the sum of the mortality and expense charges, with no allowance for any residual amounts to be used to accumulate cash values.

For comparison purposes, nonsmoker rates were derived for males, ages 25, 35, and 45, and were extended for 20 years from the issue age.⁴ A nonparametric test of the differences in the median annual renewable term and universal life first-year premiums was then conducted. Additionally, 10- and 20-year net payment indexes using a 5 percent interest assumption were calculated. The median indexes provide a comparison of the estimated outlays for the pure insurance element in annual renewable term and universal life over 10- and 20-year periods. These net payment indexes also indicate whether differences noted in first-year premiums persist, given the different impact of expense charges over longer amortization periods. We

² Obviously, this approach does not address the possibility that some expenses are for the purpose of creating and maintaining the savings element of the product. Also, it is possible that an insurer may inflate the credited interest rate for competitive purposes, in effect having the mortality or expense charge subsidize the interest element. Nevertheless, the credited rate applies only to those funds remaining after deduction of mortality and expense charges. From the consumer's viewpoint, those charges are the cost of the protection element of the contract.

³ In situations where the term insurance policies had an indeterminant premium structure, the illustrated premium rather than the guaranteed maximum premium was used.

⁴ Typically, rates were only provided at five-year intervals. Linear interpolation was used to obtain intervening yearly rates. This procedure introduces some inaccuracy into the calculations.

calculated these indexes using formulas from *Best's Flitcraft Compend* (A. M. Best, 1991, p. 825).

A Wilcoxon signed rank test was used to test for differences in the sample medians of the annual renewable term and universal life premiums. The test statistic is the sum of the ranked differences. If the differences between the universal life and the annual renewable term premiums result from random variations, the value of the test statistic will be near zero.

Results

First-year premiums vary widely (see Table 1). The maximum premium was six times the minimum premium for universal life at age 25. The Wilcoxon signed rank test statistic was calculated for median first-year premiums at ages 25, 35, 45, 55, and 65. We identified a difference in median first-year premiums at the 0.05 level for ages 25, 35, 45, and 55. In all cases, the median premium for the death protection was significantly higher in the universal life policies than in the annual renewable term policies.

Table 1
Maximum, Median, and Minimum Premiums
for Annual Renewable Term and Universal Life Insurance
at Ages 25, 35, 45, 55, and 65*

Age	Maximum		Median		Minimum		Sample Size	
	ART	UL	ART	UL	ART	UL	ART	UL
25	\$212	\$659	\$154	\$192	\$105	\$110	38	38
35	250	686	170	209	113	138	38	38
45	556	818	300	360	167	270	37	37
55	1,111	1,415	624	787	316	584	37	37
65	2,859	3,385	1,526	1,806	774	1,328	36	36

* Wilcoxon signed rank test of differences in median first-year premiums significant at 0.05 level for all ages except 65.

To test for long-term policy costs, 10- and 20- year interest-adjusted net payment indexes were calculated for ages 25, 35, and 45 (see Table 2). In all cases the median net payment index for annual renewable term insurance was lower than the median universal life mortality and expense charges. The Wilcoxon signed rank test was again used to test for the difference in medians. The difference is significant at the 0.05 level for both the 10- and 20-year indexes for ages 25, 35, and 45.

Conclusions

We found meaningful differences in the cost of death protection within annual renewable term and universal life insurance for this sample of

Table 2
Wilcoxon Signed Rank Test of
Differences in Median Net Payment Indexes
(two-tailed test significant at 0.05)

	Annual Renewable Term		Universal Life	
	10-year	20-year	10-year	20-year
Age				
25	2.51	4.08	3.17	5.09
35	2.77	4.51	3.41	5.54
45	4.89	7.95	5.87	9.54

insurers. Generally, for younger ages, the differences in the median first-year cost of death protection and the net payment indexes indicate that, for holding periods of 20 years or less, policyowners can obtain death benefits at a lower cost through annual renewable term insurance rather than through universal life.

Results of this study are generalizable only to the extent that the pricing practices displayed by the sample insurers are characteristic of those used by the industry. The wide variation in costs makes generalizations hazardous. Some individual insurers in the sample priced death benefits within their universal life contract at costs lower than the death benefits of their annual renewable term policy. The results suggest that transparency may not be complete or that some other feature of universal life justifies the higher costs. Further research on this topic could provide valuable insights into the operation of insurance markets.

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Appendix

Life Insurers in the Sample

AIG Life Insurance Company	Monarch Life Insurance Company
Alexander Hamilton Life Insurance Company of America	North American Life and Casualty Company
American Health and Life Insurance Company	Northern Life Insurance Company
American Life and Casualty Insurance Company	Northwestern National Life Insurance Company
Anchor National Life Insurance Company	Occidental Life Insurance Company of North Carolina
Commercial Union Life Insurance Company of America	Philadelphia Life Insurance Company
E. F. Hutton Life Insurance Company	Provident Life and Accident Insurance Company
Federal Home Life Insurance Company	Reliance Standard Life Insurance Company
Fidelity & Guaranty Life Insurance Company	SAFECO Life Insurance Company
First Colony Life Insurance Company	Security Connecticut Life Insurance Company
Great Southern Life Insurance Company	Southwestern Life Insurance Company
IDS Life Insurance Company	Sun Life Assurance Company of Canada
Integon Life Insurance Corporation	Sunset Life Insurance Company of America
Kansas City Life Insurance Company	United Life and Accident Insurance Company
Life Insurance Company of Cincinnati	United of Omaha Life Insurance Company
Life Insurance Company of the Southwest	Unity Mutual Life Insurance Company
Lincoln Benefit Life Company	Washington National Insurance Company
Lincoln National Life Insurance Company	Western Farm Bureau Life Insurance Company
Midland National Life Insurance Company	Wisconsin National Life Insurance Company

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