INDIVIDUAL LIFE PRODUCT DEVELOPMENT UPDATE

Moderator: THOMAS W. REESE
Panelists: PAMELA M. CRANE
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Recorder: THOMAS W. REESE

- Universal life
- Traditional life
- Term insurance
- Variable life
- Multiple life plans

MR. THOMAS W. REESE: The five speakers will discuss product development trends for five different types of individual life insurance products. First, I will discuss universal life products. Our second speaker, Greg Rogers, will discuss traditional participating permanent life products. Greg is managing actuary and assistant vice president at Lutheran Brotherhood. He manages the traditional life, tax reporting, and experience study areas in its actuarial division.

Then Dan Kane, vice president and assistant actuary at Prudential, will discuss second-to-die products. Dan is responsible for traditional life product development in Prudential's actuarial and product development department. He developed Prudential's survivorship policy.

Bob Rubinstein will discuss variable life products. Bob is vice president and actuary at Integrity Life, where he is responsible for pricing investment-oriented and interest-sensitive life and annuity products. Pam Crane will then cover term insurance products. Pam is a consultant in Tillinghast's Atlanta office, as am I.

Universal life is just now entering its second decade. It was during 1981 and 1982 that U.S. life companies began rushing to bring out their version of this new type of product.

Today's products are considerably different than those introduced 10 years ago. The early products had relatively high-per-thousand and percent-of-premium loads and virtually no surrender charges. The early products were generally simpler than today's products.

Universal life product design is changing only slowly at present. The following tables track recent product design changes using data taken from the Tillinghast Universal Life Analytical Study (TULAS). This is a study of universal life products published monthly for Tillinghast clients. It studies the features of about 250 universal life products.

Table 1 shows product design changes from August 1987 through February 1991. For each category, the value shown is the median value for all the products in the study.

Tillinghast Universal Life Analytic Study Data

	Aug. 1987	Dec. 1987	Feb. 1988	July 1988	Feb. 1989	Sept. 1989	Feb. 1990	Feb. 1991
	Median of All Products:							
First year loads:								
Policy fee	$48.00	$48.00	$48.00	$48.00	$48.00	$48.00	$48.00	$60.00
Fee per thousand	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Percent of premium	4.50%	4.50%	4.50%	4.50%	3.50%	3.75%	3.00%	3.00%
Renewal year loads:								
Policy fee	$36.00	$36.00	$36.00	$36.00	$48.00	$48.00	$48.00	$48.00
Fee per thousand	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Percent of premium	4.00%	3.95%	4.00%	3.95%	3.00%	3.00%	3.00%	3.00%
Monthly cost of insurance rates:								
Male-Nonsmoker 25	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11
Male-Nonsmoker 35	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12
Male-Nonsmoker 45	0.24	0.24	0.24	0.24	0.23	0.23	0.23	0.23
Male-Nonsmoker 55	0.52	0.52	0.51	0.51	0.50	0.50	0.49	0.48
Male-Nonsmoker 65	1.29	1.28	1.27	1.28	1.25	1.24	1.23	1.19
Credited rate	8.75%	8.88%	9.00%	8.75%	9.00%	8.75%	8.75%	8.50%
	Values for Male-Nonsmoker-45 $100,000 increasing death benefit with $1,500 level annual premium:							
Surrender charge:								
Year 1	$1,325	$1,364	$1,380	$1,400	$1,521	$1,526	$1,650	$1,780
Year 5	1,320	1,385	1,400	1,400	1,511	1,526	1,658	1,799
Year 10	516	508	573	508	660	660	741	868
Year 15	0	0	0	0	0	0	0	0
Cash surrender values:								
Year 1	$0		$0		$0	$0	$0	$0
Year 5	5,409		5,449		5,354	5,336	5,354	5,243
Year 10	15,800		15,922		16,128	16,172	16,094	16,010
Year 15	29,604		29,834		30,732	30,775	30,658	30,632
Year 20	47,692		48,534		50,618	50,795	50,795	50,025

TABLE 1

INDIVIDUAL LIFE PRODUCT DEVELOPMENT UPDATE

Policy fees have been stable, ranging from $48 first year/$36 renewal year in 1987 to $60 first year/$48 renewal year in 1991. The median percent of premium charge has dropped from 4.5% to 3% over this period. The median load per $1,000 has been zero through this whole period.

Slight reductions in cost of insurance (COI) rates have been experienced steadily since 1987. While there has been no change for the younger ages, the median COI rates have been declining about 2% per year above age 35.

Thus both direct expenses and mortality charges have been generally declining. Surrender charges, on the other hand, have been increasing. The median surrender charge has increased about 9% per year over the last few years.

The trend in median illustrated cash surrender values is a tribute to product design actuaries. Today's illustrated values are even higher than they were three years ago, even though the median interest rate has fallen from 9% to 8.5%!

Table 2 shows the same data for the most competitive 10% of products as measured by the 20th-year illustrated cash surrender value. For the top 10% products, the median policy fee is about the same as the median for all products. The percent of premium charge, however, has fallen from 3% in 1987 to 0% in 1991.

Median cost of insurance rates for the top 10% products are about 20% lower than for the median of all products. Median surrender charges for the top 10% products are about 10% higher than the median for all products.

Thus the top 10% products show the same design trends as for all products, but they tend to be less front-end loaded and more back-end loaded than other products.

The major product design trend has been the inclusion of "enhancement" features. These are features designed to deliver higher values to persisting policyholders.

Table 3 shows how the use of enhancement features has grown from December 1988 to December 1990. The use of enhancement features for all products has grown from only 25% of products in 1988 to half the products in 1990. About 75% of the top 50 products in the survey employed enhancement features in both surveys.

The most common product enhancement is to increase the credited interest rate after some policy duration. Half the companies using enhancements use this approach.

About 25% of the enhancements involve paying a higher interest rate once the fund value has reached a certain amount, which of course, usually happens in later policy durations. The banded approach simply credits higher interest to policies with larger fund values. The ratcheted approach credits a higher interest rate on the portion of the fund value in excess of threshold fund value.

The last 25% of enhancement features involve paying persistency bonuses, either by retroactively crediting higher interest from the date of issue or by paying a lump sum bonus, which is usually based on a return of product loads.

Tillinghast Universal Life Analytic Study Data

	Aug. 1987	Dec. 1987	Feb. 1988	July 1988	Feb. 1989	Sept. 1989	Feb. 1990	Feb. 1991
	Median of Top 10% (by 20th-Year Cash Surrender Value) Products:							
First year loads:								
Policy fee	$48.00		$42.00		$48.00		$42.00	$60.00
Fee per thousand	$0.00		$0.00		$0.00		$0.00	$0.00
Percent of premium	3.00%		3.00%		2.00%		0.00%	0.00%
Renewal year loads:								
Policy fee	$48.00		$30.00		$48.00		$48.00	$60.00
Fee per thousand	$0.00		$0.00		$0.00		$0.00	$0.00
Percent of premium	3.00%		0.00%		0.00%		0.00%	0.00%
Monthly cost of insurance rates:								
Male-Nonsmoker 25	$0.10		$0.11		$0.10		$0.11	$0.09
Male-Nonsmoker 35	0.11		0.11		0.10		0.11	0.09
Male-Nonsmoker 45	0.20		0.21		0.19		0.22	0.18
Male-Nonsmoker 55	0.45		0.47		0.43		0.54	0.37
Male-Nonsmoker 65	1.12		1.14		1.16		1.30	1.05
Credited rate	9.25%	9.00%	9.25%	9.25%	9.00%	9.00%	9.00%	8.75%
	Values for Male-Nonsmoker-45 $100,000 increasing death benefit with $1,500 level annual premium:							
Surrender charge:								
Year 1	$1,863		$1,650		$1,954		$2,025	$1,968
Year 5	1,780		1,782		1,833		1,799	1,892
Year 10	784		972		972		972	1,000
Year 15	0		0		0		0	0
Cash surrender values:								
Year 1	$0		$0		$0	$0	$0	$0
Year 5	5,653		5,507		5,325	5,325	5,096	5,491
Year 10	17,583		17,687		17,595	17,597	17,275	17,529
Year 15	33,863		35,368		35,732	35,488	35,050	34,686
Year 20	56,479		60,879		60,912	60,870	60,586	60,595

TABLE 3

Tillinghast Universal Life Analytic Study Data

Analysis of products using "enhancement" features:		
	December 1988	December 1990
Total number of products	240	241
Proportion of products using enhancement features:		
Top 25 products*	84%	72%
Top 50 products*	78%	72%
All products	26%	52%
Number of products by type of enhancement:		
Increased credited rate by duration	23	62
Banded credited rate by trigger amount	10	14
Ratcheted credited interest rates	9	19
Retroactive crediting of interest	7	6
Lump sum distribution bonus	10	24
Total	59	125

*   "Top" products measured by illustrated 20th-year cash value for Male-nonsmoker-45 $100,000 increasing death benefit with $1,500 level annual premium.

Table 4 analyzes cost of insurance rates for the 14% of policies that use select and ultimate cost of insurance rate scales. Of these companies, about half use a traditional select and ultimate pattern where the early years' cost of insurance rates are lower than attained age rates. The first year COI rate ranges from 80% of ultimate rates at age 25, 60% at age 35, and about 50% at the higher ages.

Approximately the other half of the companies using select and ultimate cost of insurance rates charge higher rates for the early policy durations as a form of expense recovery. These first-year COI rates average about 40% above ultimate rates. About half of these companies charging higher COI rates in early years include some sort of persistency bonus. None of the products charging lower COI rates in early years employ persistency bonuses.

Table 5 compares median credited universal life interest rates for about 450 products from 1985 through April 1991. Also compared is the average effective 90-day and 10-year treasury yield during each month. These data are also shown in Chart 1.

The year 1985 began with universal life interest rates at 11% and 10-year treasury yields over 12%. Treasury rates quickly fell during 1985 and 1986, and universal life interest rates gradually declined to the 8.75% to 9% level that has been experienced since mid-1987. Credited interest rates have changed little since then, although the median credited interest rate has now fallen to 8.5% -- the lowest ever for universal life products.

An important impetus for change in universal life products currently is the imposition of the so-called deferred acquisition cost (DAC) tax last fall. This tax requires expenses equal to 7.7% of universal life premiums to be capitalized each year and amortized over a 10-year period. Thus a portion of company expenses are not deductible for tax purposes in the year incurred, but are spread over the next 10 years. While this change does not increase the sum of taxes overall, it redistributes them to be incurred earlier than before.

Doug Doll of Tillinghast's Atlanta office recently surveyed the membership of the Southeastern Actuaries Club to determine their response to the DAC tax. Of the 27 companies responding, nine had no strategy to deal with the DAC tax or are taking a "wait and see" position. For the 11 companies with over $1 billion in assets, only two have not yet developed a strategy for dealing with the DAC tax.

Of the responses, 14 of the DAC tax strategies involved universal life products. The most common response was a reduction in the credited interest rate, which was used by eight companies. Other responses included increased COI rates (three companies), increased expense loads (three companies), and decreased commissions (one company). Two companies have accepted decreased profits as part of their strategy. Some companies use a combination of these strategies.

To determine the approximate effect of the DAC tax, we analyzed a simple universal life contract issued to a male nonsmoker age 45. We assumed a $15 annual premium per $1,000, a 20th-year retroactive bonus equal to a refund of all policy loads, 2% interest spread, 5% of premium load, and a 34% federal income tax rate.

TABLE 4

Tillinghast Universal Life Analytic Study Data
Analysis of UL products with select and ultimate COI rates
July 1990

	Attained Age				
	25	35	45	55	65
Median of the 14 traditional select and ultimate products*					
First year COI rate	$0.11	$0.12	$0.21	$0.40	$1.08
Attained age COI rate	$0.13	$0.14	$0.29	$0.69	$1.86
Ratio: first year attained age	81%	60%	55%	50%	45%
Median of the 19 reverse select and ultimate products*					
First year COI rate	$0.12	$0.14	$0.25	$0.57	$1.39
Attained age COI rate	$0.10	$0.09	$0.15	$0.35	$1.01
Ratio: first year attained age	105%	140%	151%	144%	130%

* Total of 238 products studied.

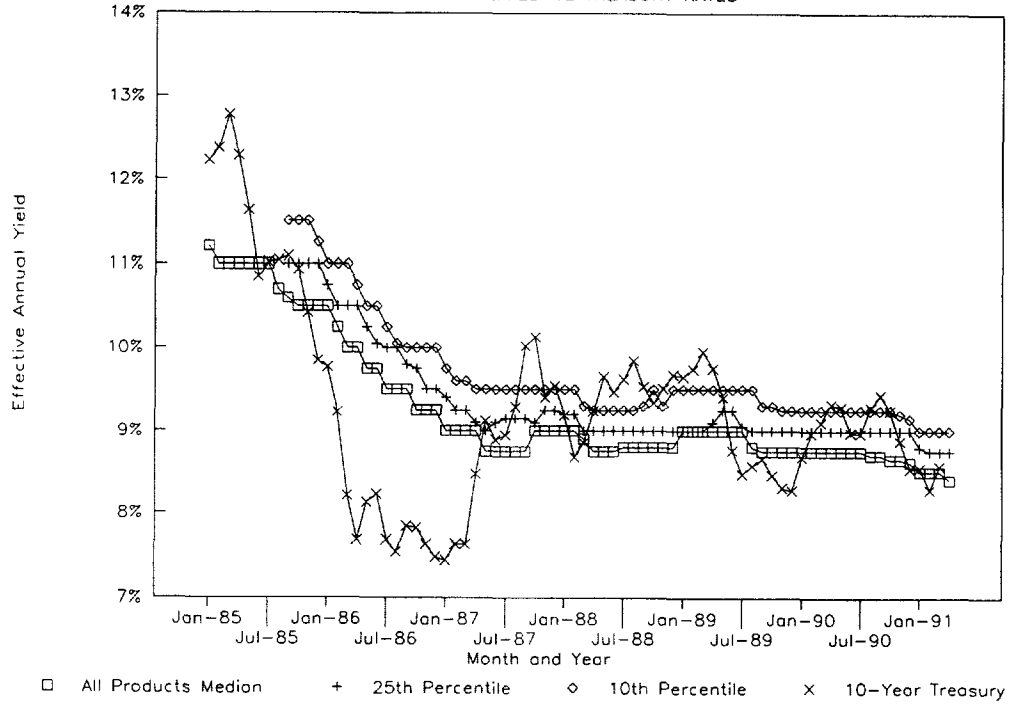|	Summary of other product features	
	Traditional select & ultimate products	Reverse select & ultimate products
First year loads:		
Policy fee	$60.00	$60.00
Fee per thousand	0.00	0.00
Percent of premium	5.00%	3.75%
Renewal year loads		
Policy fee	$36.00	$60.00
Fee per thousand	0.00	0.00
Percent of premium	4.50%	3.00%
Credited rate	8.75%	8.75%
Prevalence of persistency bonuses	.00%	.47%

TABLE 5

TULAS UL CREDITED INTEREST COMPARED TO TREASURY YIELDS:

Month	Median Universal Life Credited Rate:			Effective Treasury Yield Rate:	
	All Products	25th Percentile	10th Percentile	90-Day Rate	10-Year Rate
Jan-85	11.20%			8.19%	12.23%
Feb-85	11.00%			8.75%	12.38%
Mar-85	11.00%			9.02%	12.78%
Apr-85	11.00%			8.39%	12.29%
May-85	11.00%			7.88%	11.63%
Jun-85	11.00%			7.30%	10.85%
Jul-85	11.00%			7.44%	11.02%
Aug-85	10.70%			7.51%	11.04%
Sep-85	10.60%	11.00%	11.50%	7.46%	11.09%
Oct-85	10.50%	11.00%	11.50%	7.53%	10.94%
Nov-85	10.50%	11.00%	11.50%	7.62%	10.43%
Dec-85	10.50%	11.00%	11.25%	7.43%	9.84%
Jan-86	10.50%	10.75%	11.00%	7.40%	9.77%
Feb-86	10.25%	10.50%	11.00%	7.39%	9.22%
Mar-86	10.00%	10.50%	11.00%	6.91%	8.21%
Apr-86	10.00%	10.50%	10.75%	6.34%	7.68%
May-86	9.75%	10.25%	10.50%	6.40%	8.13%
Jun-86	9.75%	10.05%	10.50%	6.50%	8.23%
Jul-86	9.50%	10.00%	10.25%	6.10%	7.68%
Aug-86	9.50%	10.00%	10.05%	5.81%	7.54%
Sep-86	9.50%	9.80%	10.00%	5.40%	7.85%
Oct-86	9.25%	9.75%	10.00%	5.39%	7.82%
Nov-86	9.25%	9.50%	10.00%	5.57%	7.63%
Dec-86	9.25%	9.50%	10.00%	5.72%	7.48%
Jan-87	9.00%	9.40%	9.75%	5.68%	7.44%
Feb-87	9.00%	9.25%	9.60%	5.83%	7.63%
Mar-87	9.00%	9.25%	9.60%	5.80%	7.63%
Apr-87	9.00%	9.10%	9.50%	6.01%	8.47%
May-87	8.75%	9.00%	9.50%	6.00%	9.12%
Jun-87	8.75%	9.10%	9.50%	5.94%	8.89%
Jul-87	8.75%	9.15%	9.50%	6.04%	8.95%
Aug-87	8.75%	9.15%	9.50%	6.27%	9.29%
Sep-87	8.75%	9.15%	9.50%	6.62%	10.02%
Oct-87	9.00%	9.10%	9.50%	6.70%	10.13%
Nov-87	9.00%	9.25%	9.50%	6.07%	9.40%
Dec-87	9.00%	9.25%	9.50%	6.06%	9.54%
Jan-88	9.00%	9.20%	9.50%	6.16%	9.19%
Feb-88	9.00%	9.20%	9.50%	5.94%	8.68%
Mar-88	8.90%	9.00%	9.30%	5.94%	8.86%
Apr-88	8.75%	9.00%	9.25%	6.19%	9.24%
May-88	8.75%	9.00%	9.25%	6.56%	9.66%
Jun-88	8.75%	9.00%	9.25%	6.81%	9.47%

TABLE 5

(Continued)
TULAS UL CREDITED INTEREST COMPARED TO TREASURY YIELDS:

Month	Median Universal Life Credited Rate:			Effective Treasury Yield Rate:	
	All Products	25th Percentile	10th Percentile	90-Day Rate	10-Year Rate
Jul-88	8.80%	9.00%	9.25%	7.06%	9.62%
Aug-88	8.80%	9.00%	9.25%	7.38%	9.84%
Sep-88	8.80%	9.00%	9.30%	7.61%	9.53%
Oct-88	8.80%	9.00%	9.50%	7.73%	9.33%
Nov-88	8.80%	9.00%	9.30%	8.10%	9.51%
Dec-88	8.80%	9.00%	9.50%	8.55%	9.68%
Jan-89	9.00%	9.00%	9.50%	8.77%	9.66%
Feb-89	9.00%	9.00%	9.50%	8.98%	9.74%
Mar-89	9.00%	9.00%	9.50%	9.37%	9.96%
Apr-89	9.00%	9.10%	9.50%	9.22%	9.76%
May-89	9.00%	9.25%	9.50%	8.89%	9.40%
Jun-89	9.00%	9.25%	9.50%	8.69%	8.76%
Jul-89	9.00%	9.05%	9.50%	8.36%	8.47%
Aug-89	8.80%	9.00%	9.50%	8.35%	8.57%
Sep-89	8.75%	9.00%	9.30%	8.14%	8.66%
Oct-89	8.75%	9.00%	9.30%	8.00%	8.46%
Nov-89	8.75%	9.00%	9.25%	8.09%	8.31%
Dec-89	8.75%	9.00%	9.25%	8.05%	8.27%
Jan-90	8.75%	9.00%	9.25%	8.05%	8.68%
Feb-90	8.75%	9.00%	9.25%	8.19%	8.97%
Mar-90	8.75%	9.00%	9.25%	8.31%	9.10%
Apr-90	8.75%	9.00%	9.25%	8.21%	9.32%
May-90	8.75%	9.00%	9.25%	8.21%	9.29%
Jun-90	8.75%	9.00%	9.25%	8.16%	8.98%
Jul-90	8.75%	9.00%	9.25%	8.08%	8.97%
Aug-90	8.70%	9.00%	9.25%	7.84%	9.28%
Sep-90	8.70%	9.00%	9.25%	7.77%	9.43%
Oct-90	8.65%	9.00%	9.25%	7.56%	9.24%
Nov-90	8.65%	9.00%	9.20%	7.43%	8.88%
Dec-90	8.62%	9.00%	9.15%	7.15%	8.54%
Jan-91	8.50%	8.80%	9.00%	6.60%	8.55%
Feb-91	8.50%	8.75%	9.00%	6.22%	8.28%
Mar-91	8.50%	8.75%	9.00%	6.18%	8.57%
Apr-91	8.40%	8.75%	9.00%	5.92%	8.49%

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TULAS UNIVERSAL LIFE CREDITED INTEREST
COMPARED TO EFFECTIVE TREASURY RATES

□ All Products Median   +   25th Percentile   ◇   10th Percentile   ✕   10-Year Treasury

Table 6 shows that the effect of the DAC tax on product loads varies according to the profit objective being used. Column A represents pricing results before the DAC tax. The internal rate of return was 17.4%, and the present value of profits discounted at the earned interest rate was $6.20. Column B shows the effect of the DAC tax. The internal rate of return is reduced by 1.6% to 15.8%. The present value of profits at the earned interest rate is reduced by $0.80 to $5.40. Column C shows that a 0.25% reduction in the interest rate will restore the original profit as measured by present value at the earned interest rate. Column D, however, shows that a 0.50% reduction in the interest rate is required to restore the original internal rate of return. This effect occurs because the revenue from a decreased interest rate is not well matched with the effect of the DAC tax. A profit objective involving a higher discount rate requires a larger reduction in the credited interest rate to offset the effect of the DAC tax.

TABLE 6
Universal Life Insurance Example Results

	A	B	C	D
DAC tax included?	No	Yes	Yes	Yes
Interest spread	2.00%	2.00%	2.25%	2.50%
Profit measures				
Internal rate of return	17.4%	15.8%	16.7%	17.5%
Present value at				
earned rate	$6.20	$5.40	$6.30	$7.20
Present value at 15%	$1.70	$0.70	$1.40	$2.10
20th-year cash value	$522	$522	$505	$488

Table 7 shows that a strategy involving an increased percent of premium load better matches the effect of the DAC tax. Increasing the percent of premium load by 2% restores the profit objective on both an internal rate of return basis and on a present value at the earned interest rate basis.

TABLE 7
Universal Life Insurance Example Results

	A	B	E
DAC tax included?	No	Yes	Yes
Premium load	5%	5%	7%
Profit measures			
Internal rate of return	17.4%	15.8%	17.2%
Present value at			
earned rate	$6.20	$5.40	$6.30
Present value at			
15%	$1.70	$0.70	$1.70
20th-year cash value	$522	$522	$511

PANEL DISCUSSION

MR. GREGORY A. ROGERS: My subject is traditional life, which in my opinion, is very much an "in" product and has a definite place in our industry. Traditional whole life insurance has always been the choice of people looking for long-term financial security. That is why it has been the industry standard for decades, weathering all kinds of economic environments. Its popularity is due, I think, to its combination of valuable guarantees -- lifetime protection, level premiums, cash value buildup, nonforfeiture options, loan privileges, and tax advantages.

I would like to begin by telling you what my company, Lutheran Brotherhood, has done to improve its traditional life insurance line of business. Lutheran Brotherhood has a complete portfolio of products. We brought out universal life in the early 1980s and as for many other companies, it soon became our biggest seller. In most states, through our subsidiaries, we also sell mutual funds and variable products including variable universal life and variable annuities.

We updated our traditional life portfolio in 1988. The portfolio is called the Presidential Series. It consists of a banded whole life contract, a life paid-up-at-65 contract, and a new product called Presidential Plus -- which I will describe later in more detail. We already had a current 80 CSO term portfolio including annual renewable term (ART), spouse and child riders, and guaranteed purchase option.

By 1989 we began to see a definite shift from universal life to traditional life. We are selling significantly more traditional life than universal life measured by number of contracts and premiums, but just slightly more measured by face amount.

Presidential Plus is one of our best sellers. What we did with Presidential Plus was combine the traditional guarantees of whole life with a great deal of flexibility and choice of premium levels. Because this product can be structured in a variety of ways, the customer can choose the premium level and insurance amount that he or she wants and build his or her own personal plan. We were not the first company in the industry to come up with this type of product, but it certainly has been popular with our agents and customers.

Chart 2 illustrates how Presidential Plus works. The base plan is traditional whole life insurance -- which provides the important contractual guarantees such as lifetime protection, level premiums, and cash value buildup. The base plan also pays dividends beginning at the end of the first year. These dividends are used to purchase (1) dividend term insurance (DTI) at very competitive rates and (2) additional paid-up insurance (PUAs) that also earns dividends and has cash value. The additional protection is guaranteed in the first year, and the dividend term insurance is purchased by dividends after the first year -- that is, it is a dividend option of the contract. The amount of dividend term insurance is adjusted annually to provide a level benefit.

The general formula that we use is: the base amount plus the dividend term insurance plus the paid-up additions is equal to the total death benefit. At the end of each contract year, the annual dividend buys one-year term insurance for the next year for the DTI target amount provided the dividend is large enough to buy this amount. Any part of the current dividend in excess of that needed to provide the term insurance is used to purchase PUAs. The amount of dividend term insurance

CHART 2

Initial
Face
Amount

Dividend Term Insurance

Paid-Up Additional Ins.

PRESIDENTIAL PLUS BASE

Supplemental Coverages
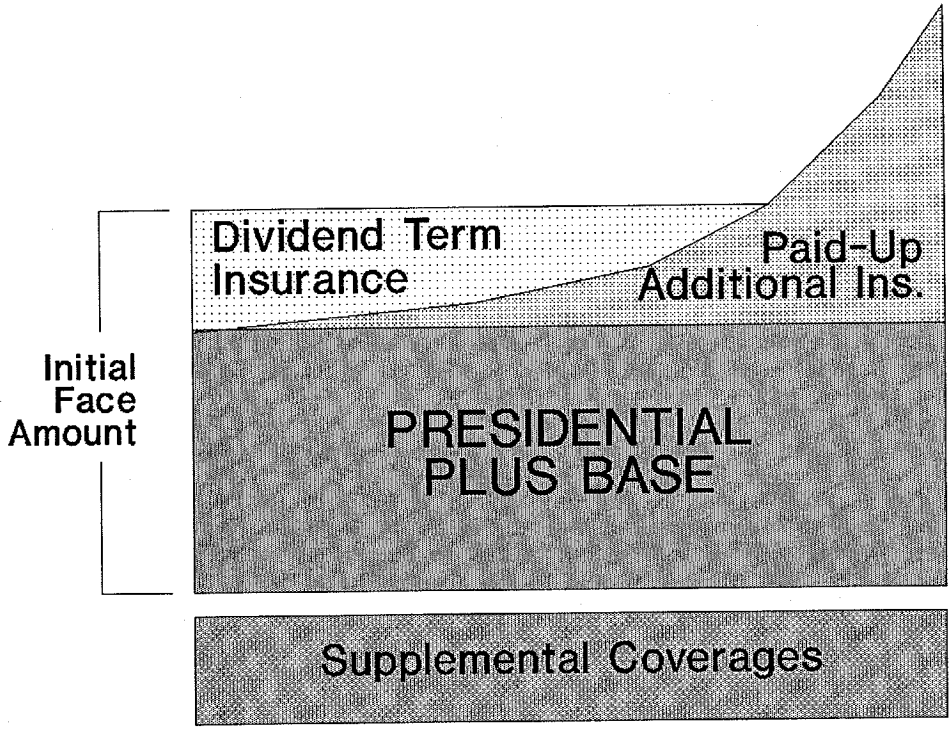
purchased reduces annually by the amount the PUAs increase, so that a level total death benefit is provided.

Maximum dividend term insurance rates are specified in the contract form. Current dividend term insurance rates are select and ultimate term rates based on Lutheran Brotherhood's current experience.

As an example, let us say at issue we have a $70,000 base and $30,000 of additional protection for a total of $100,000. At the end of the first year we have a $70 dividend which buys dividend term insurance of $29,900 and paid-up additions of $100.

So the total death benefit during the second contract year is $70,000 plus $29,900 plus $100 -- which is the original $100,000 face amount.

The way we calculate these amounts is by solving two equations with two unknowns. The equations are:

(1) $DTI + PUA - DB = Target$, and
(2) $Div + PUA - CV = DTI \times (Rate/1,000) + PUA - DB \times (NSP/1,000)$

Where: DTI = dividend term insurance amount
  $PUA - DB$ = PUA death benefit
  Div = annual dividend from the base plan
  $PUA - CV$ = existing PUA cash value
  $Rate$ = purchase rate for the DTI
  NSP = net single premium.

If the current dividend is not large enough to purchase dividend term insurance up to the target amount, PUAs (if not borrowed against) will be surrendered and their cash value will be used with the annual dividend to buy dividend term insurance for the desired amount.

So in our example, let us say we are at the end of year seven. We have $29,750 of dividend term insurance and $250 of PUAs. The dividend is $100. We use the same two equations and solve for our dividend term insurance and paid-up additions for year eight. DTI is $29,848 and PUAs are $152.

What happened here is that we had to use some of the existing paid-up additions (along with the dividend) to purchase dividend term insurance, and therefore, the paid-up additions during the eighth contract year are less than they were during the seventh year, and we have slightly more dividend term.

If the sum of the dividend and the cash value of the available PUAs is not sufficient to pay for the cost of the dividend term insurance, we give the contract owner written notice of the amount required to pay the balance of the cost. We do not require evidence of insurability on these additional premiums for coverage up to the original target since there is no increase in risk.

Back to our example. At the end of year 15, let's say we have dividend term insurance of $29,900, paid-up additions of $100, and a dividend of $150. The

dividend and existing PUAs are used to purchase DTI of $21,000. And, we will bill for $90 for $9,000 of dividend term insurance. If the billed amount is not received prior to the anniversary, the dividend term insurance will be reduced for the future life of the contract or until the time of a future dividend insufficiency. In this example, the new dividend term insurance amount or target is $21,000.

By varying the amount of additional protection (in relation to the base coverage) at issue, we can come up with a variety of premium level possibilities for the client. When we designed the product, we decided to establish several premium levels as reference points for the client and the agent. (See Chart 3.)

The first premium level is the minimum premium. This annual premium level is calculated by determining the smallest possible base plan that can still support the dividend term insurance to maturity. Contracts funded at this level will be very sensitive to lower dividend scales, contract loans, and surrender of existing paid-up additions and may require future additional premiums for any dividend insufficiencies. We recalculate minimum premiums each time we change dividend scales. Under our current dividend scale, the minimum premium for a male age 35 nonsmoker is less than $5 per thousand. Minimum premiums are calculated assuming a minor decrease in dividend interest rates.

A lower premium level -- even lower than that of the minimum premium is possible with the addition of an ART rider, but this will result in an increasing premium for the plan. (See Chart 4.)

The second premium level is the suggested premium. This was calculated assuming decreasing dividend interest rates in the future and slightly worsening mortality assumptions. It is a level that we feel more comfortable with. Plans funded at this level are less likely to require additional premiums or reduced face amounts in the event of declining dividends. For a male age 35 nonsmoker, the suggested premium is slightly less than $6 per thousand. More than 50% of our Presidential Plus sales are at the suggested premium level.
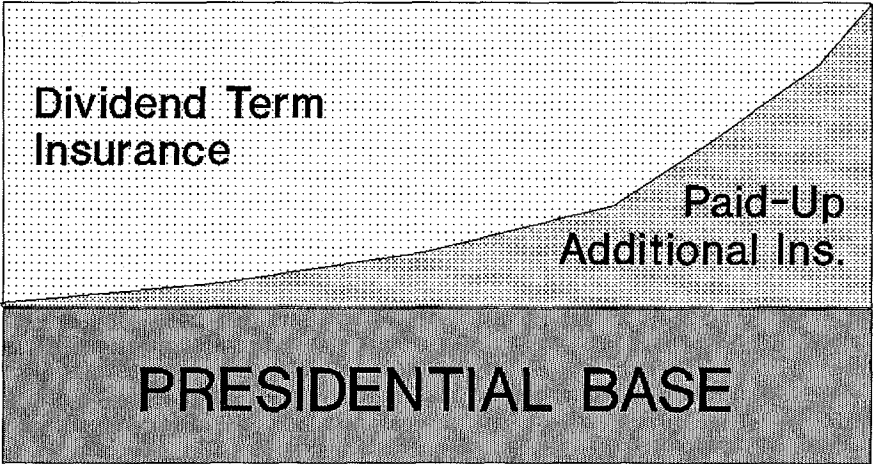
Since dividends and the dividend term insurance rates vary by age, sex, and smoking status, minimum and suggested premiums also vary by age, sex, and smoking status.

Also part of the product is an option that we call additional premium option (APO) that permits the client to make additional premium payments that buy paid-up insurance. Other companies call this a PUA rider. This option provides upward premium flexibility that produces higher cash values, higher death benefits, and shorter vanish periods for the product. The cash values and corresponding death benefits become part of the total PUAs for the plan.
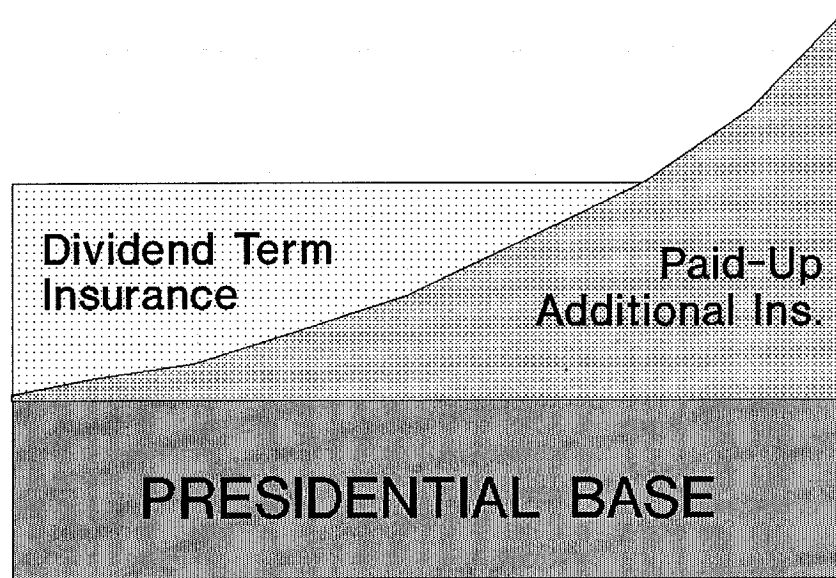
The additional premium option is available on most of our traditional life contracts. Payments can be made on a scheduled or nonscheduled basis. The additional premium option fits in well with Presidential Plus, as can be seen from the cash flow diagram. (See Chart 5.)

So with Presidential Plus, the agent has flexibility to meet the client's premium-paying ability or the premium levels of competing products. Our in-house developed
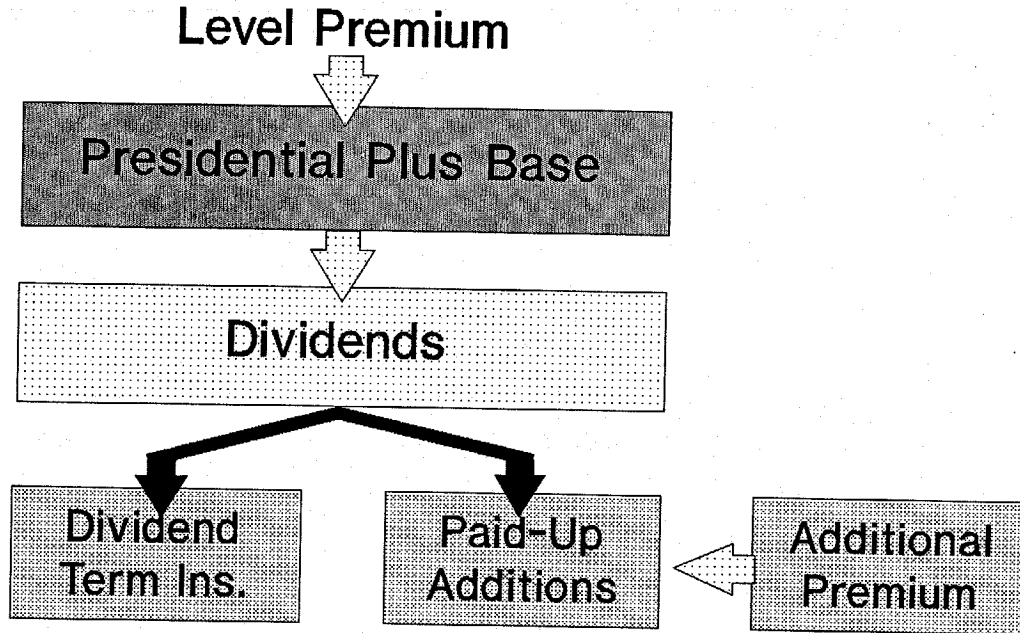
Minimum Premium
(level)

Dividend Term
Insurance

Paid-Up
Additional Ins.

PRESIDENTIAL BASE

Suggested Premium

CHART 4

Dividend Term
Insurance

Paid-Up
Additional Ins.

PRESIDENTIAL BASE

Presidential Plus
Cash Flow

Level Premium

Presidential Plus Base

Dividends

Dividend Term Ins.

Paid-Up Additions

Additional Premium

illustration system, which is quite sophisticated, also lets the agent select target cash values, or target death benefits and then solves for the premium. Our agents say that the ability to produce flexible values can offer the fine-tuning necessary to close competitive cases.

As for consumer acceptance -- our customers really seem to like our traditional life portfolio which you can see by the shift from universal life to traditional life. Our agents have the perception that traditional life is more guaranteed. Traditional life does give the impression of quality and stability.

We at Lutheran Brotherhood have seen a wide variance in the premium payment level within the traditional life line of business. Presidential Plus is generally sold with a low premium per thousand. Our other two permanent insurance products are sold with a much higher premium per thousand. I am not sure if that is in order to vanish, or perhaps the client has a higher or more aggressive cash accumulation goal.

Our agents and customers really like the "solve for" capability and the graphic capability that we have on our lap-top computers. Our most recent hot illustration is loans and surrenders or roll-out capability. Our customers want to see distributions, not just what benefits are payable at death or surrender. We have the capability of illustrating surrenders up to the cost basis with a switch to loans after that point.

Also, as a service to our customers, we have in-force illustrations available. Our agents can request them and have the illustrations downloaded to their laptop computer. The illustrations are very informative -- especially for Presidential Plus -- and are extremely popular.

Another feature that has been very successful is what we call Update. Update is a consolidated statement of all of a client's Lutheran Brotherhood contracts and accounts. It gives an overview of all of their current values. We annually mail these statements to our members to keep them informed.

Next, I would like to discuss competitive trends. I think that our customers are looking beyond price and looking more into the organization behind the products. Our customers are purchasing an intangible, so they want to know the company and the people (and even the investments) backing the products.

When we at Lutheran Brotherhood talk about being competitive, we stress our three strengths: how we illustrate, how we treat those who purchased our products in the past, and whether we have the financial strength to continue that kind of performance. It is a long-range point of view.

We are certainly not number one in the illustration of our current products. But, I do not think that you have to be number one. We are not a company that comes in with a great illustration but does not follow through down the road. Equity is an important goal. All contractholders -- present and future -- share in the proceeds from good mortality, expenses, and investments. We, like many other companies, stress our past dividend performance, which is something we are very proud of. Financial quality, strength and vitality is also something that companies are emphasizing, including rankings by Best's, Moody's and Standard & Poor's.

PANEL DISCUSSION

Companies stress their commitment to quality products and quality service. We try to exceed our customers' expectations. This comes through, even overshadowing competition or price, in most cases.

At Lutheran Brotherhood, our marketing division has a competition unit which interacts with our agents. We have an "800" number they can call for information and/or for help. We "track" the calls so we can see which companies we are most frequently in competition with, and also see what products we are competing against.

As for pricing trends . . . the combination of low lapse rates, favorable mortality, good investment experience, and reasonable operating expenses (or in other words, good fundamentals) allows companies to offer competitive product lines. Almost all organizations are attentive to the bottom line, and are facing the same pressures on dividends -- declining interest rates, AIDS claims, and increasing expense levels.

We are selling to an older market, to more females, and for the most part, to non-smokers. Replacements are down significantly from their high levels of a few years ago.

I believe that companies with participating contracts have had a long history of treating their contractholders equitably by reflecting experience through dividends. Traditional whole life can be innovative and cognizant of the needs of customers, it can help provide for the success of a company's agents and agencies, and still be compatible with the needs of a successful company!

MR. DANIEL O'NEILL KANE: The topic that I will cover is second-to-die plans. They are currently the hot product in the marketplace. There have been dramatic increases in sales in the last few years. The estimated industry sales in 1990 were around $500 million in premium and about $30 billion in face amount. These estimates are based on extrapolated data from a Tillinghast study that covered about 30 of the largest producers and are just rough estimates. Sales in 1990 were probably close to double the level of 1989.

My company, Prudential, has had a lot of success with the product. Last year we sold in excess of $86 million in continuing premium and $5.5 billion in face amount. In addition, we had in excess of $20 million in drop-in premium. We introduced the product in September 1989, and had only a couple million in premium in 1989. The market still appears to be expanding.

In my talk I will cover four major topics: (1) marketing uses of the product; (2) the product features that are important in this marketplace; (3) the demands of the marketplace; and (4) several actuarial assumptions of second-to-die products.

Starting with marketing uses, the second-to-die products are used primarily as an estate planning tool. The tax law change in 1981 that created the unlimited marital deduction was the primary impetus for this product. However, it took awhile for companies and agents to catch on and develop products and sales strategies to exploit this market. In this marketplace, the support of tax accountants and lawyers is very important. It took them time before they accepted survivorship policies as a

good estate-planning solution. But now that lawyers and accountants have accepted the product, sales have taken off.

For estate planning, this product makes sense for insureds who have an estate in excess of $1 million. Estimates range from 2-5 million families who fall into this category. Survivorship products have thus far only captured a small part of the total marketplace. With last year's sales of around 25,000 policies, there is still much greater potential out there.

Second-to-die products are sometimes sold as an investment vehicle, replacing the single-pay whole-life products that were made unattractive by the Technical and Miscellaneous Revenue Act of 1988 (TAMRA). There are just a few companies that have structured single-pay-type survivorship products for this marketplace. The product can look attractive as an investment vehicle. The danger here, of course, is that we might get the government back down on us if sales of this type of design pick up. If the legislature thinks that we have found another way around the seven-pay definition, they might clamp down on us harder. I am not aware of how much success these companies have had in using survivorship as an investment vehicle.

The third area of marketing that is talked about considerably is business ownership arrangements. For instance, there are two partners who have a business continuation need on the second death. They could consider the purchase of a survivorship policy. There is considerable talk about this market but there is not much evidence that there have been significant sales.

A final area where there is potential is the corporate-owned life insurance (COLI) marketplace. The company owns the survivorship policy on two of its employees. COLI products are sold to meet corporate needs such as prefunding retiree health care costs or various nonqualified deferred compensation arrangements. The advantage of a survivorship product over a single life product is its lower mortality cost that improves the tax-free build-up inside the contract. There does not appear to have been a lot of activity in this area yet, but we expect it to grow.

Moving on to product features, the most important feature is premium flexibility. There are two general ways that companies approach premium flexibility. One is the universal life design. With universal life (UL) it is possible to allow considerable premium flexibility to meet the varying needs of the clients. The minimum premium can be set at a relatively low level.

The second way is through a traditional whole life product design with riders added to enhance the premium flexibility. The addition of a term rider and a PUA rider can allow considerable variation in the premium schedules for the product. The term rider can allow the agent to get the premium per thousand down to a considerably lower level than a regular whole life design. A PUA rider can be added to allow the payment of more money up front and to vanish the premiums at an earlier date.

Greg Rogers described the mechanics of how this feature works in his discussion on single life products. For large companies, the traditional approach is the most common, but there are quite a number of UL-designed products out on the street.

Another feature that is important to have available in a second-to-die product is the ability to issue to "uninsurables." Every insurance company has a different definition of an uninsurable, but at Prudential for regular single life policies we will normally not take an insured beyond around 500% of normal mortality. For our survivorship policy we will accept lives up to 2,000% of normal.

Since this product is sold in the high age market, a high percentage of insureds are rated. Thus the handling of rating is very important. Many companies use an age rate-up approach to substandard classification. This makes it easier to develop appropriate actuarial costs and it is easy for the agent and insured to understand.

Another important product feature is a policy split rider in the event of divorce or a tax law change. There are two basic types out in the marketplace. One type requires evidence of insurability at the time of the split but does not have a charge for adding the rider. The second type does not require evidence of insurability at the split but usually has a charge. Some companies do give the second type away free. However, it should be priced for. Even though the events are clearly defined as far as divorce or change in the tax law there is still a risk to the company that it will face antiselection by the insureds.

A popular new product feature is the first-to-die rider or single-life rider attached to the survivorship policy. There are several marketing purposes for this rider. It can be used to prefund the policy on the death of one of the insureds since the normal survivorship premium continues after the first death. Or, in a business split dollar situation, it can be used to buy out the corporation on the death of the primary employee and roll out the policy to the surviving insured. Sales results on this policy are very sketchy at this point. I think agents are still trying to figure out how to appropriately market the rider.

An important design criteria on the survivorship policy is what happens on the first death. When second-to-die products were first introduced several years ago, almost all companies had a change in values on the first death. Cash values and term rates increased at that time. In the last few years, the predominant approach has been to have no change in value at the first death and to calculate so-called Frasierized mortality costs. This approach essentially creates a single status mortality rate based on when the second insured dies. I will talk in more detail about Frasierization at the end of my talk. Almost all new products introduced in the last year or two use the Frasierized approach.

The third area that I want to talk about is the demands of the marketplace. This product is sold to very sophisticated individuals who normally have attorneys and tax accountants reviewing many details. Due diligence has become an important buzz word. Agents and tax advisors are constantly questioning pricing assumptions and financial strength of the companies. This is the first time actuaries are being questioned on their assumptions by agents. And it is the agents who are concerned that the assumptions are too aggressive. This is quite a reversal of roles from the normal situation where agents demand better product results.

With regard to the financial strength of companies, many companies have taken to citing various financial indices to try to make themselves look good and other

companies look questionable. It's a dangerous situation that we will find ourselves in if we put down the other companies. It could affect the public perception of the whole industry.

One aspect of the marketplace that has benefitted Prudential and other big stable companies has been the recent flight to quality. With the demise of Executive Life and the problems of other insurance companies, the importance of maintaining a strong capital position has become much more important. Agents are no longer using a company just because it has the best rates; they are focusing on the strength of the company.

The ability to illustrate lower interest rates in the illustration system is an important requirement of this marketplace. Virtually all sales involve showing illustrations at interest rates below the current crediting rate. There has also been increased demand to show higher mortality rates in illustrations. At this point there are not many companies supporting this.

The last area that I want to talk about is actuarial assumptions in two key areas, lapses and mortality. With regard to lapses, the expectation is that there will be quite low lapse rates for this product given the large premium commitment that these insureds are making and the high average age. If too high a lapse rate is assumed, there is danger of making the product lapse supported. Since this product has not been around for a long time, it is hard to know what the true lapse rates will be. One of the due diligence questions that is frequently asked is whether the product can be supported if the lapse rates are lower than assumed in the product. This is often not an easy question to answer. There is an important relationship between lapses and mortality that I will be discussing shortly.

The Frasierized approach to developing survivorship products has become the most common approach. However, there are some possible concerns about this approach. Normally in developing the survivorship mortality tables there is an assumed independence of events. However, since survivorship normally covers two related parties, the mortality rates are not necessarily independent. There has been some discussion in actuarial literature about the heartbreak syndrome, which relates to the higher mortality rate of the surviving insured on the death of the first insured. There have been nonactuarial studies that have documented the phenomenon, but I know of no actuarial studies that have shown what the impact could be on pricing.

A second nonindependence risk is the so-called contagion or joint accident risk. At Prudential we have now experienced this first hand. We paid our first survivorship claim a few weeks ago. It was on a couple who were flying together on the United flight that went down in Colorado Springs. Luckily for us, it was a relatively small claim, only $1 million. We do have risks out there for up to $50 million. However, aside from this reality, the actual probability of a joint accident is fairly low.

There are only a few hundred airline fatalities in any given year compared to the millions of people who fly regularly. The number of other accidents that involve the death of related parties is also quite low. I have not seen good statistics on it but I would estimate that the rate is less than five cents per thousand.

PANEL DISCUSSION

The third area that I have not seen in actuarial literature, but which I feel is far more important than either heartbreak syndrome or contagion risk is the lapse antiselection risk. Survivorship mortality rates are normally calculated based on first principles. You can develop a Frasierized survivorship mortality rate directly from single life rates. There is an implicit assumption in this approach that the lapse rate while both insureds are alive is the same as when only one insured is alive. If you assume that there is a difference in lapses rates depending on the status of the individuals, you will find that survivorship mortality rates are significantly different. So a key question is whether you think it is likely that lapse rates will be lower when one person is alive than when both people are alive. To me it seems quite likely that this will occur.

Why do I think there is lapse antiselection potential? These sophisticated insureds have life status knowledge that we cannot possibly know at issue. If one insured has died, the surviving insured knows that she/he cannot possibly get as good a deal now on one life as the current survivorship policy.

In addition, there is the possibility that the lapse rates on two healthy insureds will start to increase as time goes on. I will call this healthy life antiselection. If the two insureds stay healthy, they may find that they can get a better deal by surrendering their old survivorship policy and buying a new one at their higher ages.

Frasierized mortality is highly dependent on duration since issue. It is far greater than normal single life selection differences. Two healthy insureds after 10-15 years might find that they will be better off taking their cash value and moving it over to a new survivorship policy at a higher issue age. It would not surprise me in a few years if some companies start developing replacement products for current survivorship policies that could take the large lump in money that is accumulated on existing products and with low loads move it into a new survivorship policy.

There is also possible further unhealthy life antiselection. In the flexible premium designs that have been set up, single status insureds might use the premium flexibility to their advantage. An unhealthy life can take advantage of all the premium flexibility that exists to either minimize premium payments or maximize the death benefit. I believe both of these types of antiselection are greater in multiple life than single life because the insureds know the life status of one of the insureds, which we cannot in setting the Frasierized mortality.

So how significant is this lapse antiselection potential? Table 8 shows what I believe is an extreme case of the difference in lapse rates and how significant it can be on second-to-die mortality rates. The base case assumes a 5% lapse rate while both are alive or while one is alive. Then we compare this to a lapse rate of 5% while both insureds are alive, but drop to 1% when one insured is alive. The table shows the excess mortality due only to this difference in lapse rates.

The excess mortality at duration 20 exceeds 20% of the base case mortality. The percent extra mortality does decrease in later durations. However, the absolute value of the excess continues to increase until very high attained ages. At duration 30 the excess mortality exceeds $5 per 1,000.

TABLE 8
Mortality/Lapse Impact
Additional Survivor Mortality Rates Between
Lapse Rate of 5%/5% and 5%/1%
Male 55/Female 55

Duration	Extra Mortality per 1,000	Extra Mortality as Percent
1	0.00	0%
10	0.05	15
20	1.04	21
30	5.14	13
35	5.71	7

I am not saying that I believe that we will experience this large a differential in lapse rates while both insureds are alive versus when one insured is alive. But we should be aware of this potential problem. I think we in the industry have to take a lead and start setting up systems that track lapse rates and mortality by life status. Very few companies will have enough mortality data by themselves. We need to work on creating industry data. It is likely that the current systems that you have will not adequately measure lapse rates and mortality rates by life status since they were probably built to handle single life situations and did not anticipate two different lives in their design.

I do believe the Frasierized approach offers very valuable marketing benefits and can be priced appropriately. However, we need to be aware of the antiselection potential that exists and adjust for it in pricing.

MR. ROBERT S. RUBINSTEIN: In my discussion of variable life products, I will discuss sales, product, pricing and regulatory trends.

First of all, with all the hoopla over the removal of some significant tax advantages of single premium variable life, I would like to briefly review the pros and cons of a company offering variable life as part of its portfolio, particularly variable universal life (VUL) and especially in relation to fixed UL, variable annuities and mutual funds -- three major competing products.

To the customer, we have the advantages of the tax-deferred inside build-up and tax-free account transfers that mutual funds lack. There are tax-free estate values on death that variable annuities lack. And the customer can direct investments as he or she sees fit into equities, which offers the potential to earn a superior return. Fixed UL lacks this, of course.

The disadvantages of VUL are (1) a slightly lower rate than fixed UL (but I should say that the gap has recently narrowed to perhaps only 0.25%) and (2) generally fewer enhancements than UL in the area, for example, of riders and persistency bonuses.

To the company, the major advantage is that there is no spread risk on the separate account. Also, the rating agencies require less surplus on separate account assets as compared to general account assets -- perhaps, 0.5-1% for the separate account and 3-5% for the general account.

The major company disadvantages are the high entrance costs which have been estimated in the $5-6 million range. This leads to considerable C-2 risk if your sales assumptions are not met. It should however, be mentioned that you can enter into a joint venture with another company to help get around this. The high degree of SEC regulations and National Association of Securities Dealers (NASD) licensing requirements can dissuade a company that does not have the legal expertise and properly licensed sales force from entering the market. Finally, there is a high cash strain on the separate account (SA). You may be using surrender charges to offset your capital commitment through holding a lower reserve than the account value, but you must hold the full accumulation value in the SA. If you sell a preponderance of separate account business, cash flow problems can develop. For example, Monarch Life had to arrange outside financing because of this.

On balance, I believe the product is very attractive in the upscale marketplace. However, company concerns often weigh as heavily as those of customers, and for companies it is somewhat of a mixed bag. It depends on the degree your agents are active in the upscale markets, how concerned management is with C-3 risk, and how confident you are of adding sufficient incremental sales to offset the high fixed costs. These factors help determine whether a company enters the VUL market.

Table 9 illustrates sales trends. Variable life sales peaked in 1987 and have substantially declined since that time. However, we really have two product lines here. Single premium variable life was like a deflated balloon after TAMRA eliminated its tax-free loan feature. Annual premium variable life's momentum was stymied after the 1987 stock market crash. However, over the five-year period, annual premium variable life has grown at an excellent 24% rate, which is even respectable compared to variable annuities' often cited spectacular growth rate of 32%.

TABLE 9
U.S. Individual Variable Insurance Premiums ($ Millions)

Year	Variable Annuities	Annual Premium Variable Life*	Single Premium Variable Life	Total Variable Life
1985	$3,000	$325	$525	$850
1986	5,300	650	1,450	2,100
1987	6,700	1,200	2,600	3,800
1988	6,500	1,200	400	1,600
1989	8,500	750	100	850
1990	12,000	950	75	1,025
CAGR	32%	24%	−32%	4%

* Includes both flexible and fixed premiums.
Source: Tillinghast Surveys

Table 10 shows the industry's product mix. Variable life represents only a 9% share during 1990. This represents an increase from the 7% share during 1989, but is still far less than the 30% or more market share some analysts were projecting in the midst of the stock market explosion of the mid-1980s. It would seem, then, that there is considerable potential for future gains, particularly as low short-intermediate interest rates result in declining credited rates on whole life and fixed universal life.

TABLE 10
U.S. Industry Product Mix by Percent of Premiums

	1983	1985	1987	1989	1990
Traditional cash value	65%	47%	51%	54%	55%
Universal	18	38	27	27	25%
Variable	2	3	3	1	1
Variable universal	NA	1	7	6	8
Term	15	11	12	13	11

Source: LIMRA estimates

Table 11 examines the sales of the six leading companies. We see a pattern that is unique to variable life which is that, in a very fragmented insurance market, variable life sales continue to be concentrated in just a few companies. The six companies -- Prudential, Equitable, Monarch, IDS, New England and John Hancock account for 84% of total new premium and no other company has more than a 2% market share. Prudential and Equitable alone represent a combined 69% market share.

TABLE 11
Variable Life Sales

Company Name	1990 New Premiums ($ million)	Market Share
Prudential	$379	37.0%
Equitable	323	31.5
Monarch	55	5.4
IDS	43	4.2
New England	30	3.0
John Hancock	28	2.7
Total	$858	84.0%

Note: All of the above companies sell through career agents or captive registered representatives.

All of the six leading writers sell through either career agents or captive registered representatives. The enormous success of the Prudential and Equitable with their VUL products demonstrates that a high level of senior management commitment can result in this product being a major source of revenue for a company. I think this also demonstrates that while the product is attentive to the customer, there is little actual customer-driven demand. Rather, the demand is driven more by the company and its registered representatives.

So, why have variable life sales been relatively slow to develop among companies other than Prudential and Equitable? I think it is a result of a "wait and see" attitude on the part of companies. Companies are waiting to see if entry costs become cheap enough to make it worthwhile to enter the fray. They are also waiting for their sales force to demand this product.

Two new trends may lead to an increased number of new entrants. One is joint venturing, which spreads systems and other costs over more than one company. At Integrity Life, we have provided manufacturing, administrative, systems and fund management services for some six years to an array of companies. One thing we have noticed is that most companies now want their own name on their own product, something which only a few organizations can do at a reasonable cost.

Another trend is that with the tremendous technological revolution, one or more PC packages may enable companies in the future to offer this product at a reduced cost.

Now, I would like to examine specific product design features of over 30 companies that offer variable life and suggest what I see as product trends. The results are summarized in Table 12.

About half of the companies offer guaranteed death benefits. I think more may look to add this feature as they position variable life as an insurance product with good investment features rather than as an investment product that offers insurance.

Regarding the life insurance test, guideline premium predominates over cash value and should continue to do so, since we find there is more C-2 risk under the cash value design.

The main trend I see with policy charges is to higher charges and more small frontend loads in the 3-5% range. Some companies in the business are realizing that they are not going to hit their expense assumptions, so they are raising fees as their contract permits them to. New entrants are going in with higher fees than prior new entrants. Small front-end loads were considered unattractive a few years ago but are now considered necessary to cover higher expenses and the DAC tax. Of course, the SEC puts limits on what you can charge. The management and expense (M&E) charge cannot exceed 60 points for a scheduled premium product and 90 points for a flexible premium product and the sales loads cannot exceed 9% of premium on average.

Regarding transfer charges and restrictions, most companies have them, including almost all new products. On average, about 30% of the funds are in the fixed account and companies realize that restrictions such as limiting transfers out of the fixed account to 25% of the value once per year are necessary to control the C-3 risk.

I see mortality discounts for higher amounts as being critical when you are selling to wealthy individuals. Most companies offer these. Some companies have even introduced an "elite" band for jumbo policies of say $1 million or more in addition to the lower charges already in place for policies of $200,000-250,000 and higher.

It is interesting that only stock, money market and bond investment options appear in over half of the 30 products surveyed. The hot new fund of the past two years is the "managed" or "balanced" fund, where the investment manager directs the stock, bond and money market mix. About one third of the companies offer this fund. Other prevalent funds include aggressive stock, high-yield, and zero coupon bond. For the future, I think we will see two of the funds that are promoted in the mutual fund industry -- U.S. government funds and overseas funds.

TABLE 12
Variable Life
Product Design Features

		Current	Trend
Guaranteed death benefit			
	Yes	52%	
	No	48%	
Life insurance test			
Guideline premiums		70%	
Cash value		30%	
Policy loads			
Front-end; no back-end		37%	Increase in front-
Back-end; no front-end		19%	end loads
Front-end and back-end		44%	
First-year administrative charge			
Average (annual)		$143	Higher charges
		(0- $300)	
Renewal year administrative charge			
Average (annual)		$57	Higher charges
		(0 - $90)	
M&E charge			
Average		0.74%	Higher charges
		(0.50 - 0.90%)	
Transfer charges	Yes	67%	Fees for exces-
	No	33%	sive transfer
Transfer restrictions	Yes	85%	Guaranteed
	No	15%	interest
			account
			restrictions
General account rate type			
Portfolio		56%	
New money rate		26%	
Other		18%	
Mortality discounts	Yes	70%	More discounts
	No	30%	
Investment options			
Stock		100%	U.S.
Money market		100%	government
Bond		76%	overseas
Balance or managed		32%	managed
Aggressive stock		24%	
High yield		24%	
Zero coupon		24%	
Global		16%	
Outside fund manager?	Yes	45%	Multiple fund
	No	55%	managers
Riders available			
Accidental death benefit		70%	Accelerated
Disability premium waiver		59%	benefits;
Other insured		37%	long-term care

The most important trend, however, is that more companies are using outside fund managers for some or all of their funds and even multiple managers within the same product.

Outside managers include Fidelity, Oppenheimer, Scudder and American Express. For example, Chubb Life offers a product with five funds managed by four different entities. Life of Virginia offers a total of 17 funds managed by Aon, Oppenheimer, Fidelity and Neuberger Berman all within the same product.

Besides the fact that few companies can sell enough business to make their own funds economically viable, surveys indicate that consumers do not believe insurance companies are good investors, but do think that mutual fund managers are performance oriented.

In the area of riders, companies offering VUL have been slower to add accelerated benefits and long-term care riders than fixed UL companies. I would expect to see them start to do so in the near future.

Turning now to the DAC tax, as you probably are aware, 7.7% of premiums must be capitalized and deductibility of that amount is spread over 5-10 years, depending on the amount of total DAC a company has in a year. Depending on your ROE goals and whether you must use a 5-year or 10-year amortization period, the present value of the taxes could range from about 0.2-1.2% of premiums higher than under the prior tax law. Many companies will probably look to recoup this either through an effective premium tax load and/or increasing COI charges by, say, 5-10%. In addition, we will probably see some fixed account interest rate reductions.

Finally, I will touch very briefly on recent regulatory matters. The development that could have the most impact is the SEC's comprehensive study underway of the 1940 Act. All issues related to the 1940 Act are being considered including mortality and expense charge regulation and a possible new and simplified definition of sales load. The results are due out in a few months.

In response to an SEC "concept release," the ACLI has proposed that greater product design flexibility be permitted by considering all charges in the aggregate and would also remove absolute limitations of such charges. Instead, the insurer would make a representation that aggregate charges are either in the range of industry practice or are reasonable in relation to costs and risks.

Finally, the SEC has been focusing on disclosure issues. Actuaries may find it wise to notify in-house counsel promptly if they plan to, for example, raise COI rates in the future or reduce or eliminate persistency bonuses that were illustrated at sale. The SEC is very concerned that companies may be using unrealistic illustrations.

MS. PAMELA M. CRANE: The last portion of this section deals with term product development trends. Specifically, I would like to focus on two topics . . . the new style level term policies as well as an update on Guideline XXX.

First, with respect to the new term policies, we are seeing a definite shift in the term marketplace, away from the ART policies, which emphasized low first-year cost, toward the newer level term policies, which emphasize low average cost.

Features frequently associated with these newer level term policies are: term periods from 7-15 years, with 10 years definitely predominating; low, competitive "current" premiums; multiyear premium guarantees, (at the "current" level) often for the full term; reentry options at the end of the first term period, usually requiring evidence of insurability; and automatic renewal on a YRT basis at the end of the level term period.

There are alternative designs such as: five-year level term policies, where the premium rates for the first renewal period (years 6-10) is also guaranteed at issue resulting in a full 10-year premium guarantee of a step-rated premium; 10- or 15-year level term policies without a YRT renewal option, both with and without the reentry option; premium guarantee periods, shorter than the level term period, combined with a premium bail-out (the premium bail-out is the refund of one year's premium, if the rates for the nonguaranteed portion of the level term period are raised above the initial projected level); and optional guaranteed reentry rider, marketed with some of these products.

From a consumer's point of view, the new level term policies really offer a better price over time than ART policies. The ART policies that have dominated the term marketplace in recent years, were sold almost e clusively on the basis of low first-year premium. A general rule of thumb, however, is that the lower the first-year cost, the greater the average cost even over a short period such as 5-10 years.

As an example, to illustrate this point, the following premium information was extracted from a fairly recent competitive survey that appeared in Best's Review, (December 1990 issue) and is based on male/nonsmoker/age 35/$250,000 policy size. (See Table 13.)

TABLE 13

Lowest First-Year Cost	First-Year Premium	10-Year Average Premium	10-Year Interest-Adjusted Cost
ART-1	$190	$460	$1.94
ART-2	193	407	1.56
ART-3	207	455	1.72
Lowest 10-Year Average Cost			
ART-4	$260	$319	$1.25
ART-5	283	331	1.29
ART-6	258	333	1.30
10-year LT-1	$263	$263	$1.05
10-year LT-2	298	298	1.19
10-year LT-3	310	310	1.24

Source: Data from "Term Insurance Policy Comparison" by Roger L. Blease, Best's Review – Life/Health Insurance Edition, Vol. 91, No. 8, p. 62-63.

ART-1, ART-2 and ART-3 were the three ART policies with the lowest first-year premium. ART-4, ART-5, and ART-6 were the three ART policies with the lowest 10-year average cost. Ten-year LT-1, LT-2 and LT-3 were the three 10-year level term policies with the lowest 10-year average cost.

On a 10-year average cost basis as well as on the 10-year interest-adjusted cost index, the three "top" 10-year level term policies (LT-1, LT-2 and LT-3) outperformed both sets of "top" ART products. A comparison between the three ART policies, selected on the basis of lowest first-year cost and the three 10-year level term policies shows that the ARTs have first-year premiums about $75-100 less than the 10-year level term policies; but, for this the insured pays an average of $100-200 more per year for these ARTs, ($1,000-2,000 in total extra cost over the 10-year period).

Consumers who were attracted to ART products, by the low first-year cost, are faced with either qualifying for reentry or replacing their business every few years, in order to keep that low cost advantage. The alternative is to pay the steep, escalating scale of renewal premium associated with these low first-year cost ARTs, in order to maintain their coverage. Insureds have been left with the continuing uncertainty as to their future insurability, while at the same time, many companies and their reinsurers are taking steps to actively avoid this chronic replacement business. Many insureds and the agents who have dealt with them, have become very disillusioned with the ART policies that focused solely on low first-year costs. These newer level term products offer the consumer a viable alternative by having very competitive premiums on a 10-year average cost basis, and these premiums are guaranteed. The insured can lock in to a good deal.

Insurance companies have also become disillusioned with the low first-year cost ART products. These term policies were typically priced to break even over six or seven years; however, the average ART policy was staying in force for only about half that period. On the other hand, the group of insureds who keep their policies in force is heavily populated by people who can no longer requalify or replace. Persistency experience is poor, and the emerging mortality experience is not favorable either.

The new 10-year level term products help address these problems. Shifting the focus of the sale, away from short term, (first-year cost), to longer term (10-year average cost) has a direct correlation with expected persistency. The low first-year cost ARTs provide the insureds with unpleasant surprises in years two, three and four, while the newer level term policies become more attractive to the insured with each passing year. After three or four years into a level term period, the price incentive to replace policies does not really exist. This has been confirmed by the emerging persistency experience of a number of companies who are successfully marketing these newer level term policies. Many of the companies have indicated that their persistency on these new products is very favorable -- ahead of pricing assumptions, more like whole life persistency, etc.

Agents, too, are receptive to these new level term policies. These policies typically pay a slightly higher commission rate than their ART counterparts, and that commission rate is applied to a higher going-in premium, which results in significantly more commission dollars to the agent. At the same time, the agents are being relieved of

the prospect of dealing with unhappy insureds who are having difficulty with re-qualifying or finding replacement products.

The multiyear guarantee of premiums that are intrinsic in these new level term policies is considered a very important competitive feature of these new term products. However, the premium levels on these policies are sufficiently low enough to trigger deficiency reserves when these premiums are subject to such multiyear guarantees.

Many companies have currently avoided deficiency reserves by structuring their products as a graded premium whole life. After the initial level term period, the product automatically renews on a YRT basis. Reserves are calculated on a unitary basis, with future sufficiencies in the guaranteed YRT premium rates, offsetting the earlier deficiencies in level term premium rates. In addition, the basic reserves during this level term period, as calculated by the unitary method, are generally less than the reserves that would have been calculated for a separate nonrenewable level term policy.

In response to this practice, the NAIC's Life and Health Actuarial Task Force developed Guideline XXX, which, as of this point in time, has not been adopted. The guideline requires reserves to be calculated separately for each period of level premiums, with respect to both basic reserves and deficiency reserves. In addition, the guideline, as originally proposed was to be retroactive -- a particular onerous provision.

At the December 1990 meeting of the NAIC's Actuarial Task Force, an industry advisory committee presented its final report, containing an alternative, nonretroactive proposal to Guideline XXX. Under this proposal, basic reserves would be equal to the greater of the reserves calculated under two separate methods: the unitary method, where the net premium is a constant percentage of the gross premium and with mean reserves subject to a minimum of no less than one-half the cost of insurance for the year; and a segmented reserve method, where the policy is broken into segments according to how quickly the premium increases compared to the cost of insurance, and the reserve being calculated independently over each segment by the unitary method.

The actual determination of segments depends on the computation of reserves by the unitary method, over increasingly longer segments – one year, two years, three years – until the first time that negative terminal reserves are generated, at which point the first segment is defined. The first segment is determined on a Commissioners Reserve Valuation Method (CRVM) basis. The end of the first segment is the starting point for the second segment, which is again determined by calculating reserves over increasingly longer periods, but this time on a net level premium basis, until negative terminal reserves are generated. This determines the end of the second segment, which is used as the beginning of the next segment and so on.

In addition, the industry advisory committee's proposal recommends a new lower set of select factors extending over a longer period (15 years) for use with the 1980 CSO basic table. The new select factors are intended for use with all products not just term products.

With respect to deficiency reserves the advisory committee's proposal utilizes the same reserve method as is proposed for basic reserves, but with a modified mortality basis, which is much weaker than the statutory valuation basis used for basic reserves.

The deficiency reserve mortality basis is split in two parts. The first part is a "safe harbor" basis, equal to approximately 70% of the 75-80 basic tables (select and ultimate) ranging from about 80% of the table at age 35 to 65% at around ages 55 and over.

The second part is for use with preferred risk policies. In such situations, a lower basis would be allowed subject to an absolute minimum of approximately 60% of the 75-80 table, ranging from 70% at age 35 down to 55% at age 55. These lower mortality bases are intended for use with preferred underwriting classes, and would be subject to requirements for an actuarial opinion, justifying the degree of conservatism, or lack thereof, in the mortality assumption used, and cash-flow testing to show the amount and sources of funds available to fund the required reserve increases.

The proposal is currently being exposed for comment by the ACLI.