

Product Development Beginning to End: Indexed Life Issues

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IUL Agenda

Market Overview

The case for Indexed UL

Product Features

IUL Issues

Indexed Modeling Complexities

IUL Case Study

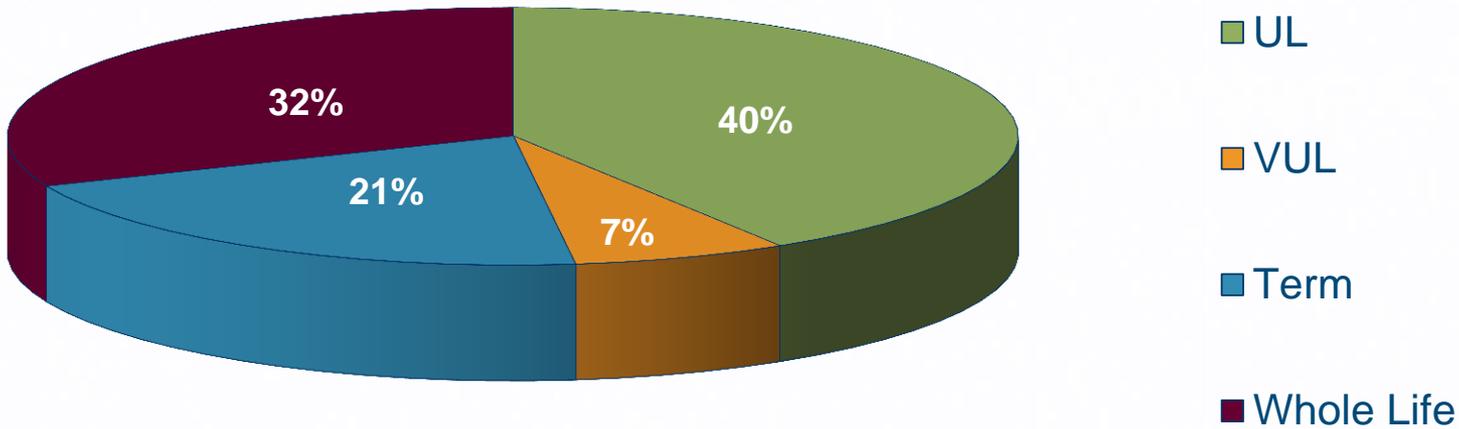
Questions

Market Overview – Life Products

Individual Life Insurance Growth Rates by Product				
		Percent Change 2011-2012		
		Annualized Premiums	Face Amount	Number of Policies
Universal Life	Fourth Quarter	20%	7%	-8%
	Year to Date	8	5	-3
Variable Universal Life	Fourth Quarter	16	-4	-8
	Year to Date	0	-10	-9
Term	Fourth Quarter	4	3	2
	Year to Date	0	1	1
Whole Life	Fourth Quarter	6	7	4
	Year to Date	7	7	5
Totals	Fourth Quarter	12%	4%	0
	Year to Date	6%	2%	1%

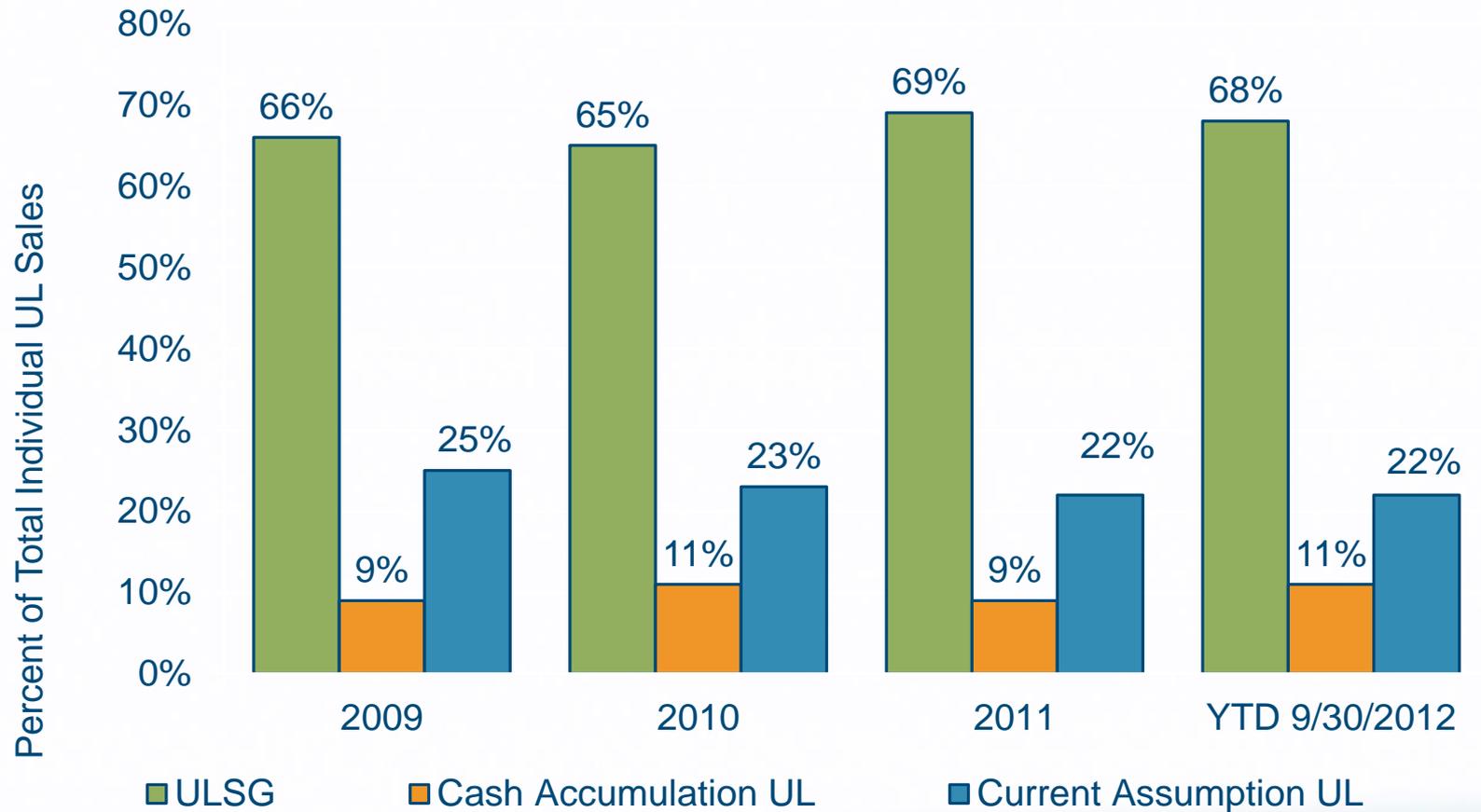
Source: LIMRA's U.S. Individual Life Insurance Sales Summary Report, Fourth Quarter 2012

2012 Market Share of Annualized Premium



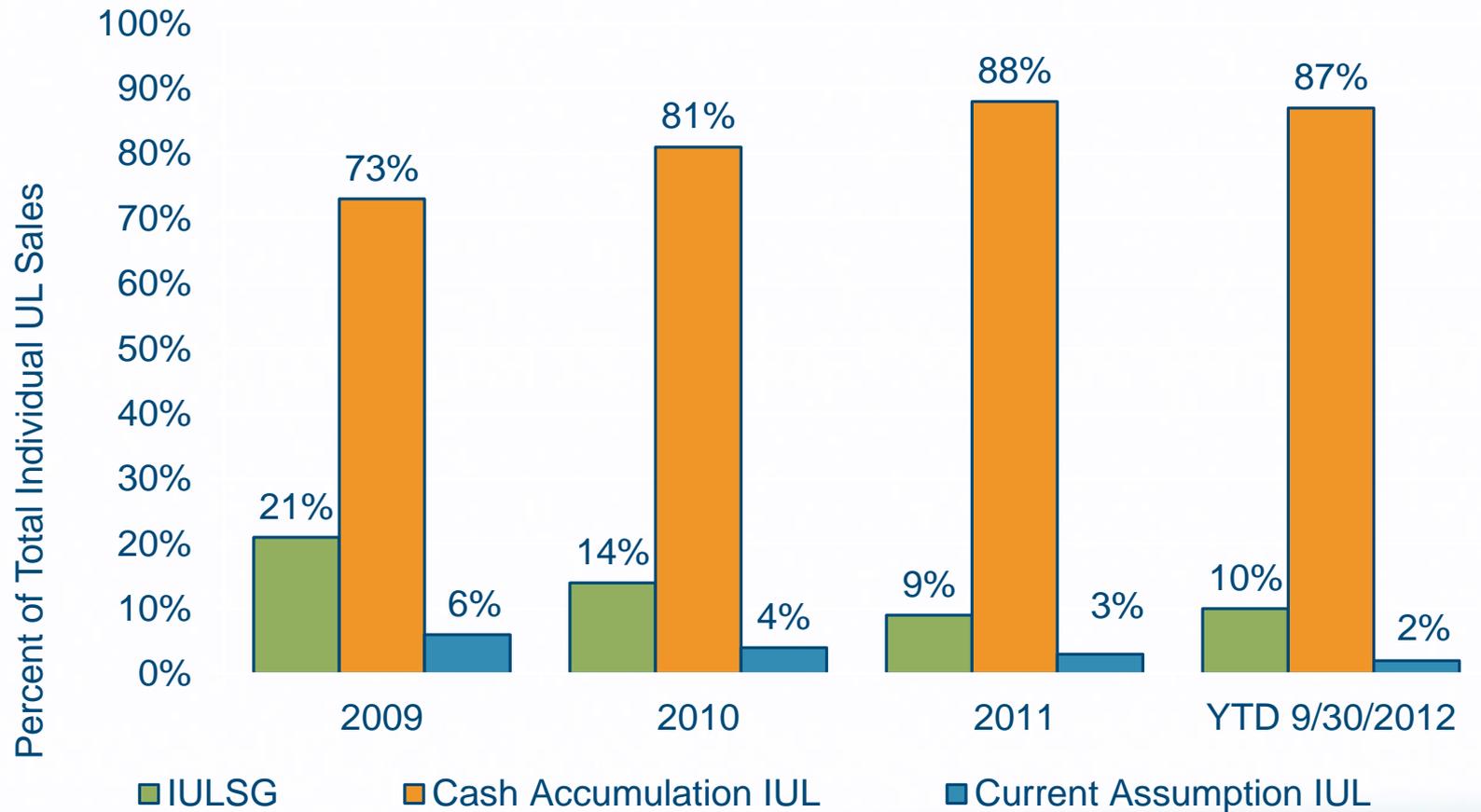
Source: LIMRA

Non-IUL UL Sales: More and more ULSG



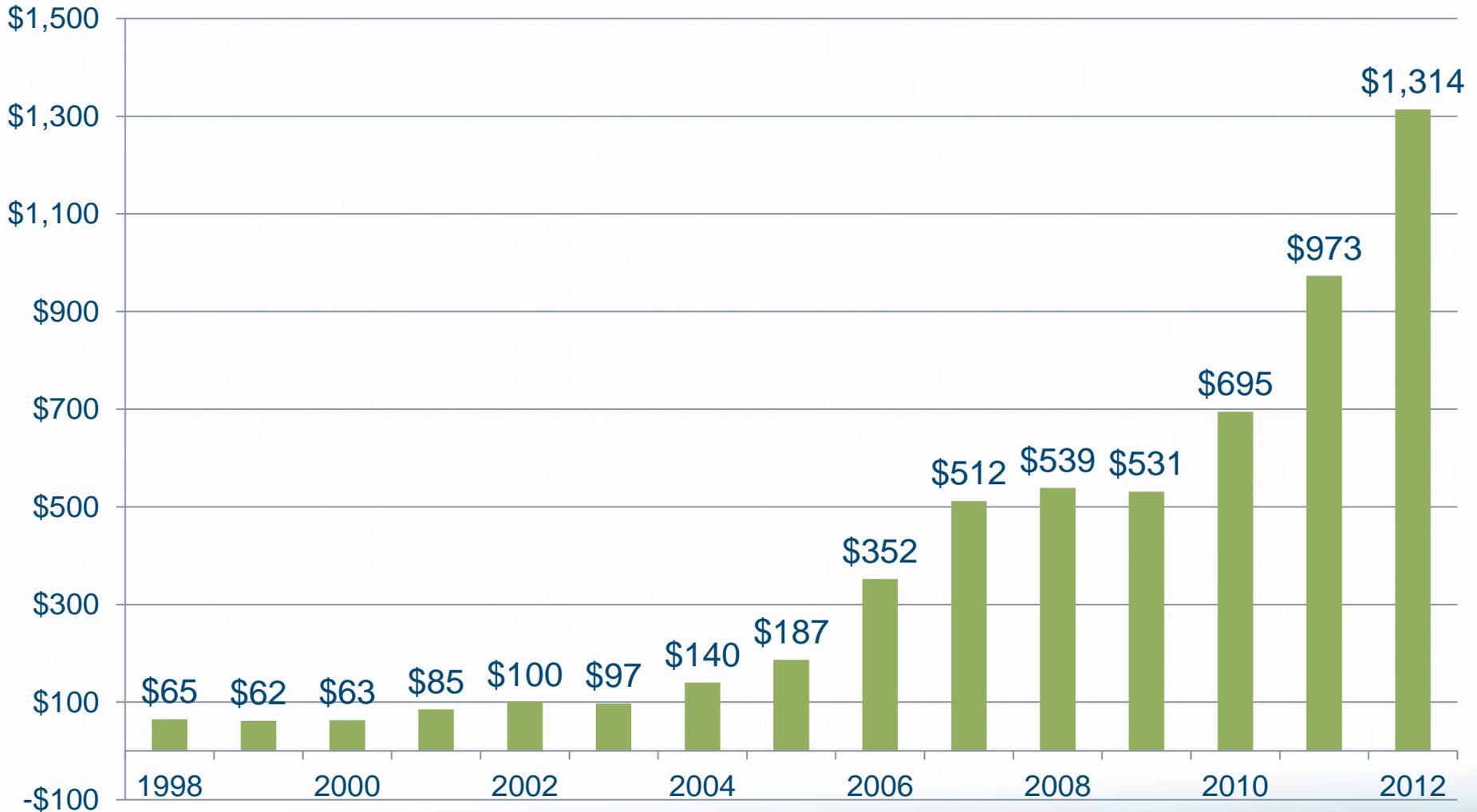
Source: Milliman UL/IUL Surveys

IUL Sales: Not so much ULSG



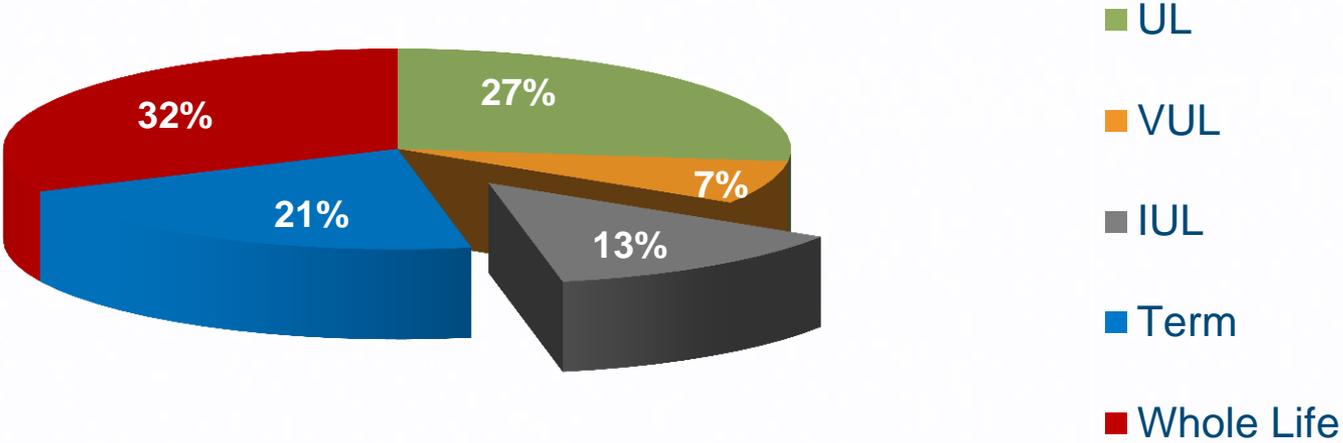
Source: Milliman UL/IUL Surveys

Indexed UL Sales (Total UL is 10+B)



Source: AnnuitySpecs' Sales & Market Report 4th Quarter 2012

2012 Market Share of Annualized Premium



Source: LIMRA (modified)

Life / Annuity Sales Drivers: Market Forces



Leaning on IUL

- Traditional current assumption UL difficulty illustrating well
 - Low cost death benefit
 - Retirement income
- Indexed UL continues to illustrate well
 - Historical lookback to set illustrated rate
- Annual pt to pt with cap remains most prevalent method
- Sometimes offer methods merely to boost illustrated rate
 - 2-yr pt to pt, even though seldom chosen by policyholders
- Is market leaning on IUL to do too much in this environment?

New Product Features - IUL

- Secondary Guarantees
- GLWB
- Indices and Crediting Strategies

IUL Issues

- Choosing equity growth rates for pricing and illustration testing
- AG 36
- Offering guarantees, incorporating AG38
- Setting cap and participation rates
- Illustration testing issues
- Variable rate loans

Indexed Modeling Complexities

- Option pricing models
 - Volatility surfaces
 - Data hard to come by
 - Some options do not have closed form
- The need to model asset portfolio in pricing
- To assess interest rate risk
- Solvers to model rate setting; management action levers
 - Caps
 - Participation rates
 - Spreads

Indexed Modeling Complexities (Continued)

- Multiple crediting strategies
- Multiple buckets
 - At least 12 per crediting strategy for IUL
- In-force Modeling Complexities
 - Mapping of Buckets
 - Global Hedges versus Liability cell specific hedges
 - Others?

Indexed UL Pricing Case Study

- Started with traditional fixed UL
 - Endowment premium at 3.25% credited interest
 - 10 year per unit load to get starting IRR
- Switched to indexed product
 - First with UL premium
 - Recalculated premium with same mechanics, 6.5% indexed growth
 - Recalculated premium again, 6.5% but 50% of prior per unit load
- Ignored AG36 for this example

Indexed UL Pricing Case Study

	PV at 12%	PV at 12%	PV at 12%	PV at 12%	PV at 12%
Product	Fixed UL	Indexed UL	Indexed UL	Indexed UL	Indexed UL
Credit/Growth	3.25%	3.25%	3.25%	6.50%	6.50%
Premium	UL Endow	UL Endow	UL Endow	UL Endow	UL Endow
Hedge Ratio	Original	100%	95%	100%	95%
IRR	11.5%	11.7%	11.7%	19.1%	17.9%
InvIncome	\$12,684	\$12,230	\$12,253	\$15,870	\$15,708
AOptPurch	\$0	(\$11,123)	(\$10,567)	(\$13,923)	(\$13,227)
AOptMat	\$0	\$10,254	\$9,741	\$25,264	\$24,001
AOptValue Change	\$0	\$1,184	\$1,125	\$1,614	\$1,533
Gen Int Credits	\$10,610	\$280	\$280	\$274	\$274
Indexed Credits	\$0	\$9,374	\$9,374	\$23,277	\$23,277
Interest Margin	\$2,074	\$2,892	\$2,898	\$5,274	\$4,464
Expense Loads	\$17,840	\$17,840	\$17,840	\$17,840	\$17,840
Commissions	\$4,074	\$4,074	\$4,074	\$4,074	\$4,074
Expenses	(\$5,291)	(\$5,298)	(\$5,298)	(\$5,259)	(\$5,259)
Expense Margin	\$16,623	\$16,616	\$16,616	\$16,655	\$16,655
Funds released on Surrender	\$16,843	\$16,606	\$16,606	\$20,872	\$20,872
Surrender benefits	\$14,714	\$14,681	\$14,681	\$18,254	\$18,254
Surrender Margin	\$2,129	\$1,925	\$1,925	\$2,618	\$2,618
COIs	\$7,180	\$7,198	\$7,198	\$6,756	\$6,756
Funds released on Death	\$989	\$973	\$973	\$1,781	\$1,781
Death benefits	\$5,357	\$5,357	\$5,357	\$5,711	\$5,711
Mortality Margin	\$2,812	\$2,814	\$2,814	\$2,827	\$2,827
AV/Res Diff	(\$3,344)	(\$2,814)	(\$2,814)	(\$4,171)	(\$4,171)
Int on TS	\$816	\$813	\$813	\$950	\$950
Int on FS	(\$57)	(\$33)	(\$31)	\$778	\$602
Other Changes	(\$0)	\$3	\$3	\$9	\$9
Sum	\$4,309	\$4,364	\$4,369	\$7,894	\$7,260

Indexed UL Pricing Case Study

	PV at 12%	PV at 12%	PV at 12%	PV at 12%	PV at 12%
Product	Fixed UL	Indexed UL	Indexed UL	Indexed UL	Indexed UL
Credit/Growth	3.25%	3.25%	6.50%	6.50%	6.50%
Premium	UL Endow	UL Endow	UL Endow	First IUL Endow	Revised IUL Endow
Expense Load	Original	Original	Original	Original	50% of Original
IRR	11.5%	11.7%	17.9%	39.6%	17.4%
InvIncome	\$12,684	\$12,253	\$15,708	\$7,989	\$7,344
AOptPurch	\$0	(\$10,567)	(\$13,227)	(\$5,447)	(\$6,157)
AOptMat	\$0	\$9,741	\$24,001	\$9,883	\$11,171
AOptValue Change	\$0	\$1,125	\$1,533	\$641	\$721
Gen Int Credits	\$10,610	\$280	\$274	\$280	\$203
Indexed Credits	\$0	\$9,374	\$23,277	\$9,006	\$10,579
Interest Margin	\$2,074	\$2,898	\$4,464	\$3,779	\$2,298
Expense Loads	\$16,623	\$16,616	\$16,655	\$14,689	\$8,712
Commissions	\$17,840	\$17,840	\$17,840	\$10,716	\$9,702
Expenses	\$4,074	\$4,074	\$4,074	\$3,487	\$3,403
Expense Margin	(\$5,291)	(\$5,298)	(\$5,259)	\$486	(\$4,394)
Funds released on Surrender	\$16,843	\$16,606	\$20,872	\$8,610	\$9,727
Surrender benefits	\$14,714	\$14,681	\$18,254	\$6,783	\$7,679
Surrender Margin	\$2,129	\$1,925	\$2,618	\$1,827	\$2,047
COIs	\$7,180	\$7,198	\$6,756	\$7,587	\$7,545
Funds released on Death	\$989	\$973	\$1,781	\$647	\$678
Death benefits	\$5,357	\$5,357	\$5,711	\$5,358	\$5,357
Mortality Margin	\$2,812	\$2,814	\$2,827	\$2,876	\$2,866
AV/Res Diff	(\$3,344)	(\$2,814)	(\$4,171)	(\$1,892)	(\$2,248)
Int on TS	\$816	\$813	\$950	\$466	\$495
Int on FS	(\$57)	(\$31)	\$602	\$1,647	\$361
Other Changes	(\$0)	\$3	\$9	\$3	\$3
Sum	\$4,309	\$4,369	\$7,260	\$8,746	\$4,206

Indexed UL Pricing Case Study: Moving past deterministic

Item	IRR	
Base, deterministic 6.5% Growth	17.4%	
Base, deterministic 3.25% Growth	12.1%	
Stochastic (6.5% avg; 20% vol)		
Scenarios less than 9%	5%	
Scenarios between 9-12%	21%	
Scenarios between 12-15%	49%	Avg 13.0%
Scenarios between 15-18%	25%	
Scenarios greater than 18%	0%	

What's it mean? Important not to assume equity indices go up overall expected amount each and every year.

Questions?