Pricing Lapse-Supported Products

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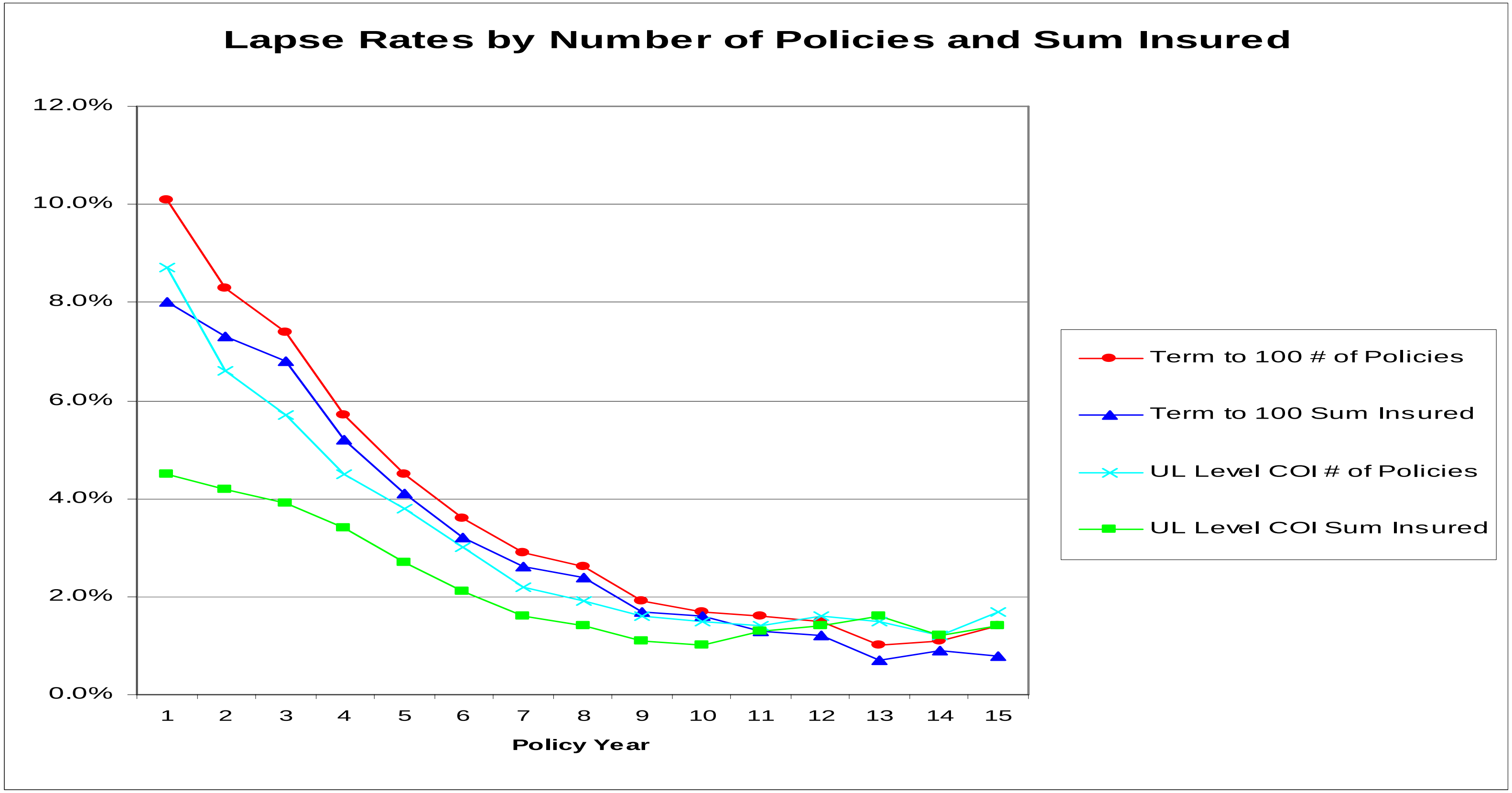
Lapse-supported products are common in both the US and the Canadian insurance markets

A lapse-supported product is a product where there exists a lower lapse rate than assumed in pricing, which would result in a significant negative financial impact to the company.

United States	Canada
■ Universal Life No-Lapse Guarantee ■ Return of Premium Term ■ Long Term Care	■ Term to Age 100 ■ Universal Life Level Cost of insurance

The Canadian Institute of Actuaries (“CIA”) lapse experience studies are widely used as an ultimate lapse assumption basis for lapse-supported products



Sources: “Lapse Experience Under Lapse-Supported Policies,” Canadian Institute of Actuaries, October 1999

“Lapse Experience Under Universal Life Level Cost of Insurance Policies,” Canadian Institute of Actuaries, June 2003

The CIA experience studies for Term to 100 and UL Level COI products show ultimate lapse rates ranging between 1% and 2%.

The CIA study experience for Term to 100 and UL Level COI products is comparable to an "in-the-money" assumption on a UL NLG policy with remaining premium requirements

- There is a range of industry practice with respect to lapse rates by duration
- Common practice to have lower ultimate lapse rates in combination with a dynamic lapse assumption when UL NLG is "in-the-money" (i.e. Account Value <= 0)
  - 50% of base lapse rate when Account Value <= 0, and remaining premium requirements
  - 0% lapse rate when Account Value <= 0, and no remaining premium requirements
- Common to have lower lapse rates for higher funding levels (e.g. Single Pay, 10-Pay) and higher issue ages

	CIA Experience By Sum Assured		Base Lapse Rates Industry Range		
Duration	**Term to 100**	**UL Level COI**	**Low**	**Med**	**High**
1	8.0%	4.5%	1.0%	3.0%	8.0%
5	4.1%	2.7%	2.0%	3.0%	4.0%
10	1.6%	1.0%	2.0%	3.0%	4.0%
20	-	-	1.0%	2.5%	4.0%
30	-	-	1.0%	2.5%	4.0%
40	-	-	1.0%	2.0%	4.0%
50	-	-	0.0%	2.0%	4.0%

Sources: "Lapse Experience Under Lapse-Supported Policies," Canadian Institute of Actuaries, October 1999

"Lapse Experience Under Universal Life Level Cost of Insurance Policies," Canadian Institute of Actuaries, June 2003

There are additional sources that could be used as bounds for setting a UL NLG lapse assumption

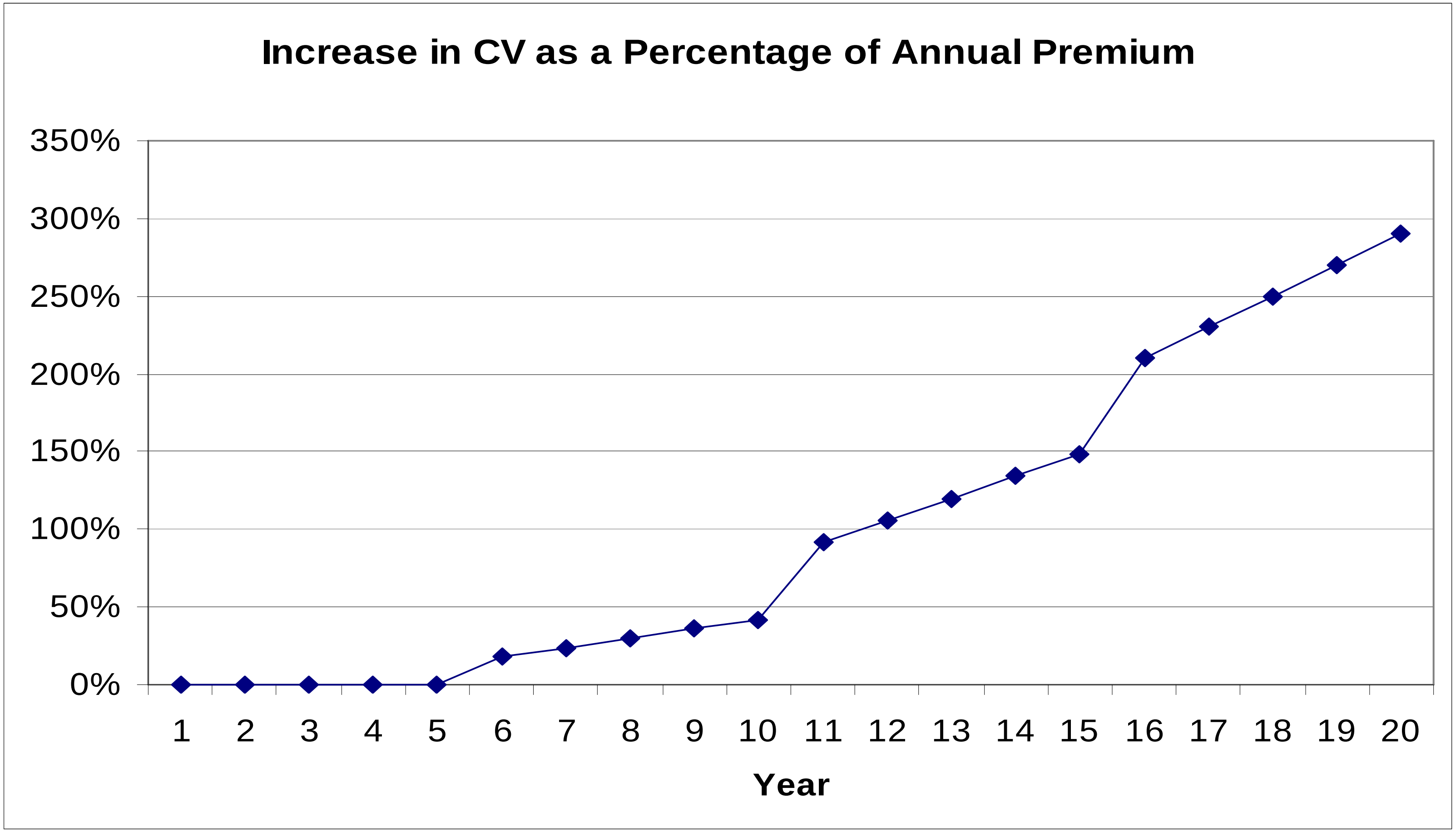
- Upper Bound
  - "U.S. Individual Life Persistency Update," a joint study sponsored by LIMRA International and the Society of Actuaries
    - — Examines lapse experience for universal life policies issued during 2002 and earlier
    - — Underlying data consists mainly of traditional current assumption universal life product designs
    - — Ultimate lapse rates just above 4.0% (durations 11+)
- Lower Bound
  - Allowable lapse rates in reserve calculation per the recent amendment to Actuarial Guideline XXXVIII
    - — Policy years 1 – 5: max 2% lapse rate
    - — Policy years 6 – policy anniversary (varying by issue age): max 1% lapse rate
    - — Thereafter, 0% lapse rate

We can continue to expect a decline in UL NLG ultimate lapse rates as the life settlement market grows

- What is a life settlement?
  - A life settlement company purchases a life insurance policy from an insured, providing a cash settlement to the insured generally greater than the cash surrender value.
  - Life settlement company takes over the premium payment and receives the death benefit
  - Most popular on higher attained ages and higher face amounts
- To generate a profit from the life settlement, the policy must stay in force, resulting in increased persistency
  - The earlier the death of the insured, the greater the payoff to the life settlement company
  - Poorer mortality risks will persist, while the more favorable risks lapse, resulting in mortality deterioration over time

Illustrative

Ultimate lapse rates are also a key assumption for ROP Term products, where the slope of the cash value is a key factor



ROP Term products typically provide for the return of an increasing percentage of premium paid if the policy is cancelled.

Illustrative

Internal rates of return can be quite high relative to today's interest rate environment

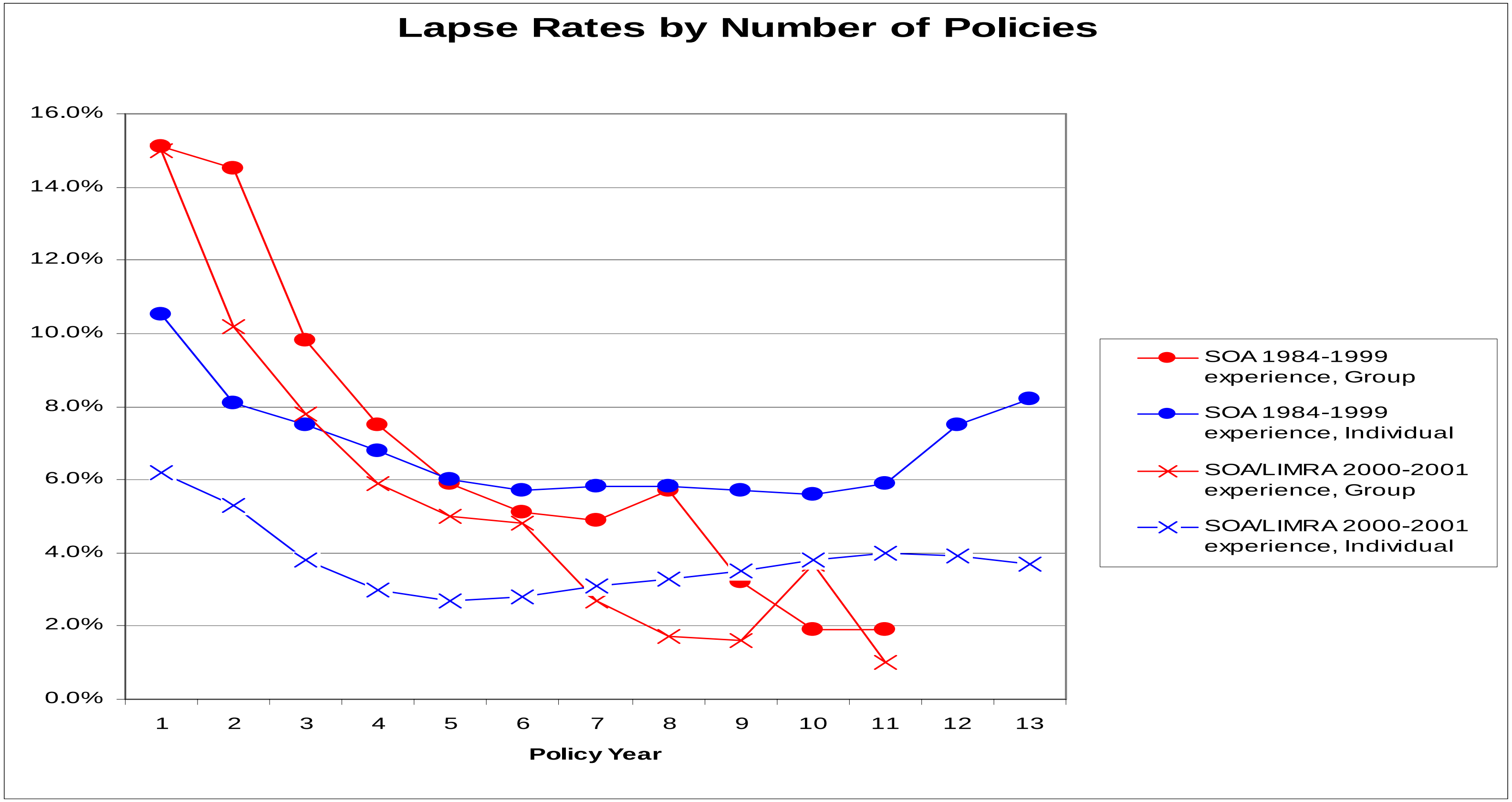
- At the end of each policy year, policyholders can calculate the opportunity cost of lapsing
- Choices are:
  - Pay future premiums and receive full return of premium at the end of the level term period
  - Receive partial return of premium now
  - IRRs required to make the choices equivalent are shown to the right

End of year	IRR
1	0.5%
2	1.1%
3	1.8%
4	2.6%
5	3.5%
6	4.4%
7	5.4%
8	6.5%
9	7.6%
10	8.9%
11	9.5%
12	10.0%
13	10.4%
14	11.0%
15	11.6%
16	11.3%
17	11.0%
18	10.8%
19	10.5%

It is reasonable to assume that the market will recognize the significant rates of return that are foregone upon lapse

- Typical to grade down from base term lapse rates to 1-2%
  - “Cliff” approach is also used
- Common to move from base term lapse rate to 1-2% level rate at duration in which increase in cash value exceeds payment of one additional premium

Long-term care persistency has been improving over the last several years, mainly attributable to individual lines of business



Sources: "Long-Term Care Insurance Persistency Experience," LIMRA International and Society of Actuaries, 2004

Ultimate lapse rates ranging from 1.0% to 2.0% is a common expectation for future experience.

In setting the ultimate lapse rate assumption on long-term care, there are several items to consider

- Presence of (or lack of) nonforfeiture benefits
- Inflation protection benefits
- Premium pattern
- Distribution of business
  - Issue Age
  - Marital Status
  - Risk Class
- Industry experience shows that rate increases may not always result in a shock lapse

In accordance with the NAIC Life Insurance Illustrations Model Regulation, policies must be self-supported but not lapse-supported

Self-Supported Test

- Demonstration that a policy form is self-supporting (i.e. not subsidized by another policy form or by any other source)
- Based on assumptions underlying an insurer's disciplined current scale
  - No provisions for future improvements (e.g. mortality improvement) allowed
  - Greater of marginally allocated or NAIC generally recognizable expenses; fully allocated expenses may always be used

Lapse-Supported Test

- Demonstration that a policy form is self-supporting, and not lapse-supported, using a modified lapse assumption
  - Policy years 1-5: Persistency rates based on disciplined current scale
  - Policy years 6+: 100% persistency
- Does not apply to policy forms with no nonforfeiture values (e.g. certain term coverages)

Accumulated Policy Cash Flows $\geq$ Illustrated Policyholder Value

Policy years 15+: single life policies

Policy years 20+: second-to-die policies