TRANSACTIONS OF SOCIETY OF ACTUARIES
1991-92 REPORTS

V. A LONG-TERM LOOK AT YEARLY RENEWABLE TERM LAPSATION IN THE UNITED STATES, 1987–1990 EXPERIENCE*

PREFACE

This report was prepared by the Financial Research Department of the Life Insurance Marketing and Research Association, Inc. LIMRA has given the Society of Actuaries permission to reproduce this study as part of the Society's expansion of its experience studies. Discussions of this report as well as of any experience study are encouraged. LIMRA and the Society intend to work together to expand this report and seek additional data contributors. Part I of this report is "1988–89 Long-Term Ordinary Lapse Survey in the United States"; Part II is "1988–89 Long-Term Ordinary Lapse Survey in Canada"; Part III is "1989–90 Long-Term Ordinary Lapse Survey in the United States"; and Part IV is "1989–90 Long-Term Ordinary Lapse Survey in Canada."

INTRODUCTION

In 1991 term insurance accounted for 12 percent of the life insurance market as measured by annualized premium. The most common form of level term insurance continues to be yearly renewable term (YRT), which makes up 58 percent of term policies (Table 1).

TABLE 1

RENEWABLE TERM MARKET SHARE AND CHARACTERISTICS*

Length of Premium Payment	Term Market Share 1985	1987	1990	Average Size Policy	Premium per $1,000
1 year	57%	58%	58%	$170,000	2.30
5 years	13	15	20	100,000	3.90
10 years	8	11	11	95,000	4.10
15 years	—	—	2	169,000	4.40
20 years	2	1	2	68,000	4.10
Other	20	15	7	—	—

*From LIMRA's U.S. Buyer Study (1/R Code 84.00).
—None.

On average, YRT products have higher face amounts and lower premiums per $1,000 than other level term products. According to LIMRA's U.S. Level Face Amount Term Study (I/R Code 93.00), other YRT product characteristics include:

- Minimum issue age of 15 to 20
- Maximum issue age of 60 to 70
- Minimum face amount of $50,000 or $100,000
- Renewable to age 100
- Convertible to age 65 or to age 70
- Policy fee of $25 or $50.

LIMRA has analyzed YRT lapse rates over a combined three-year period for 28 companies. The combined three-year period consists of lapse experience between policy anniversaries from 1987 to 1988, from 1988 to 1989, and from 1989 to 1990. LIMRA developed an average lapse rate for each company weighted by the amount of in force and the number of years the company supplied data. LIMRA analyzes only level face amount products with annually increasing premiums, including (1) nonparticipating products with indeterminate premiums that have current and guaranteed premium schedules, (2) nonparticipating products with guaranteed premiums, and (3) participating products paying dividends. (See the annual Long-Term Ordinary Lapse Survey, I/R Code 63.30, for lapse rates on other products.)

This study measures lapses on three bases: face amount, annualized premium, and number of policies. All 28 companies provided face amount data, 27 companies supplied policy count data, and 23 companies provided premium data. The study also looks at how lapse rates vary by issue age, policy year, and company size. Issue age groups include 20–29, 30–39, 40–49, and 50–59, as well as all issue ages combined (including those under age 20 and over age 59). Policy years include individual policy years 1 to 10 and combined policy years 11 and over.

Example of a First-Year Lapse

A new policy is issued and the first 12 months of premium are subsequently paid, but the premium due in policy month 13 is not paid by the end of the grace period. This is a first-year lapse, not a second-year lapse.

Weighted Average Lapse Rate

This rate equals the mean of individual company lapse rates weighted by the amount of in force; therefore, company size affects the results.

Unweighted Average Lapse Rate

This rate equals the mean of individual company lapse rates; therefore, company size does not affect the results.

HIGHLIGHTS*

- Median lapse rates range from 14.9 percent in policy year 1 to 10.7 percent in policy years 11 and over. Policy year 2 experiences the largest lapsation (18.8 percent). Subsequent lapse rates decrease by 1 percent each year to approximately 12 percent in policy years 7–9. Lapse rates drop to about 11 percent thereafter. (See Table 3.)
- Half of the companies have first-year lapse rates between 11.6 percent and 18.3 percent. (See Table 3.)
- Small companies (less than $2 billion of YRT in force) have the highest lapse rates. Large companies (at least $7 billion of YRT in force) have slightly better long-term persistency than medium-sized companies (between $2 billion and $7 billion of YRT in force), even though medium-sized companies have the lowest first-year lapse rates. (See Table 8.)
- In the first policy year, large policies have better persistency than small policies. The median face amount lapsing in the first year is $159,000, while the median face amount persisting is $186,000. However, by the third policy year, large policies lapse more frequently. (See Table 11.)
- Policies issued to people between ages 20 and 29 have significantly higher first-year lapse rates than policies issued to other age groups. By the tenth policy year, issues ages 20 to 29 have the lowest lapse rates. (See Table 6.)

TRENDS IN FACE AMOUNT LAPSE RATES

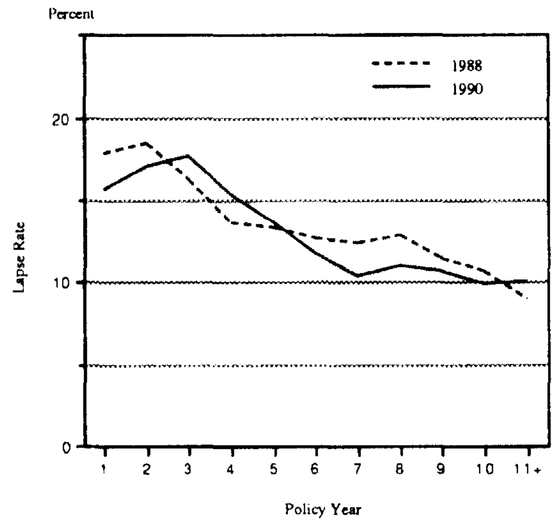
Figure 1 provides median 1988 and 1990 face amount lapse rates for a constant group of 17 companies that supplied 1988, 1989, and 1990 data. First-year lapse rates and rates for policy years 6–10 have dropped since 1988. In 1988 and 1990 more than 50 percent of the projected lapses occurred by the beginning of the fifth policy years.

This example illustrates the effect of lapses on an in-force block of business: If a company has 100,000 policies in force (no new sales) and experiences lapse rates similar to the 1990 lapse rates, 24,000 policies are in

*Based on face amount lapsing.

force by the end of year 10. If a company experiences 1988 lapse rates, only 22,000 policies remain at the end of year 10.

Figure 1 — Lapse Rates for Constant Companies

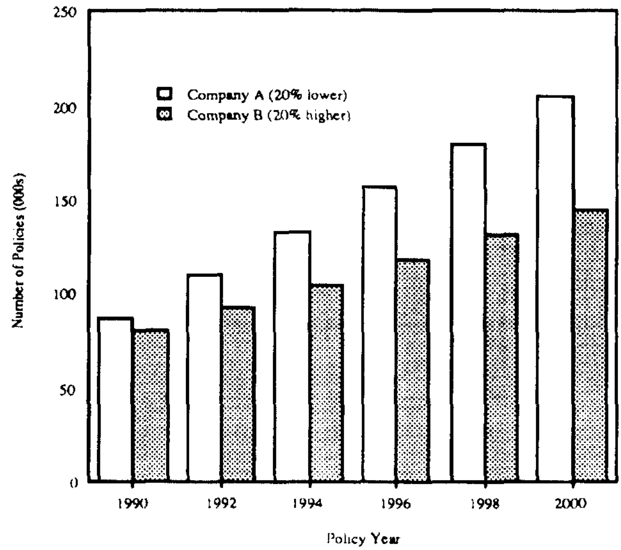


EFFECT OF LAPSES ON IN-FORCE GROWTH

The experience of the two hypothetical companies illustrates how lapsation affects a company's in-force growth. Company A experiences lapse rates that are 20 percent lower than median policy count lapse rates, while Company B experiences lapse rates that are 20 percent higher than median policy count lapse rates (Table 2). At the beginning of policy year 1990, each company has 100,000 policies in force—75,000 renewing policies and 25,000 new issues. From 1991 through 2000, YRT sales increase 5 percent each year, so in 2000 each company will write approximately 41,000 new policies.

By the end of 2000, Company A will have 206,000 policies in force and Company B will have 145,000 policies in force. Each company writes approximately 355,000 new policies from 1990 through 2000, but lower-lapse Company A gains 106,000 in-force policies, compared with a 45,000-policy gain for higher-lapse Company B.

Figure 2 — Lapse Effect on In Force Business



Therefore, Company B needs to sell 121,000 more policies over the 1990–2000 period to achieve the same number of policies remaining in force as the lower-lapse company. In other words, Company B must sustain an annual sales growth rate of 10.5 percent—sell 476,000 policies instead of 355,000 policies from 1990 to 2000—to end up with 206,000 policies in force like Company A. (This comparison does not address the much higher acquisition costs for new issues versus the costs involved for renewing business or the fact that the higher-lapse company will likely experience higher mortality.)

SUMMARY OF YRT LAPSE EXPERIENCE

Figure 3 shows the range of face amount lapse rates among companies. Figures 4 and 5 show median face amount lapse rates by company size and by issue age, respectively. Figure 6 shows lapse rates by unit of measure, while Figure 7 shows median face amount lapsing and persisting.

Figure 3 shows the variation of face amount lapse rates across all companies. Fifty percent of the companies have first-year lapse rates between 11.6 percent and 18.3 percent. The largest variation of lapse rates occurs in policy year 6, where 50 percent of the companies have lapse rates between 10.5 percent and 19.0 percent. (See Table 3.)

Figure 3 — Variations of Lapse Rates

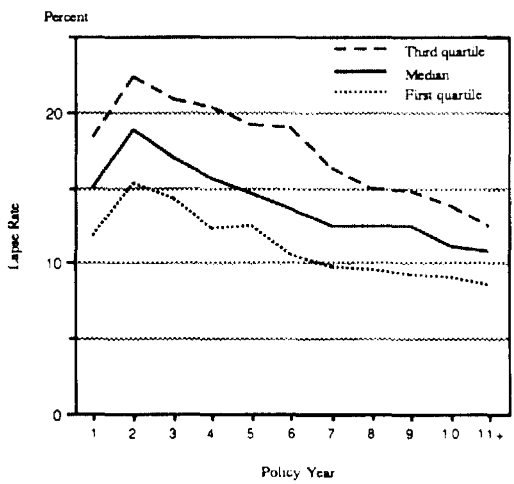


Figure 4 shows median face amount lapse rates by company size. Overall, small companies (less than $2 billion of YRT in force) exhibit the highest lapse rates, especially in policy year 2. In this duration, small companies have a 25.9 percent lapse rate, while medium-sized companies (between $2 billion and $7 billion of YRT in force) have a 17.7 percent lapse rate and large companies (at least $7 billion of YRT in force) have a 16.8 percent lapse rate. Large companies have slightly better long-term persistency than medium-sized companies, even though medium-sized companies have the lowest first-year lapse rate. (See Table 8.)

Figure 4 — Lapse Rates by Company Size

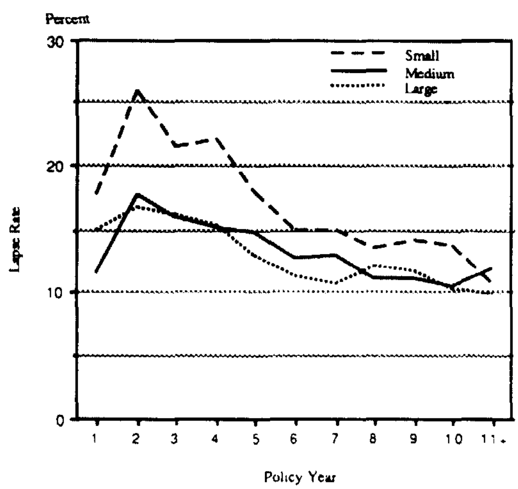


Figure 5 shows face amount lapse rates by issue age. Issue ages between 20 and 29 have a significantly higher first-year lapse rate than the other issue ages. This age group has a 23.5 percent lapse rate, while issue ages between 50 and 59 have a 13.7 percent lapse rate. By the tenth policy year, issue ages 20–29 have the lowest lapse rate. (See Table 6.)

Figure 5 — Lapse Rates by Issue Age

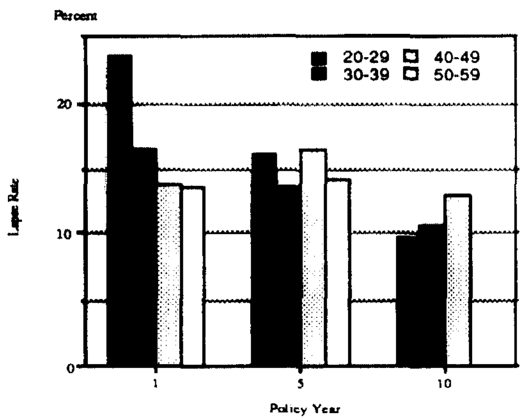


Figure 6 shows median lapse rates by unit of measure for 21 companies supplying data for all three measures. In the first policy year, large policies have better persistency than small policies as evidenced by lower face amount and premium lapse rates. In the tenth policy year the pattern is reversed. (See Table 13.)

Figure 6 — Lapse Rates by Measure

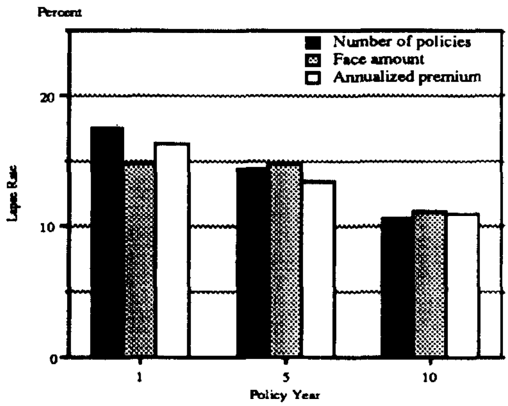
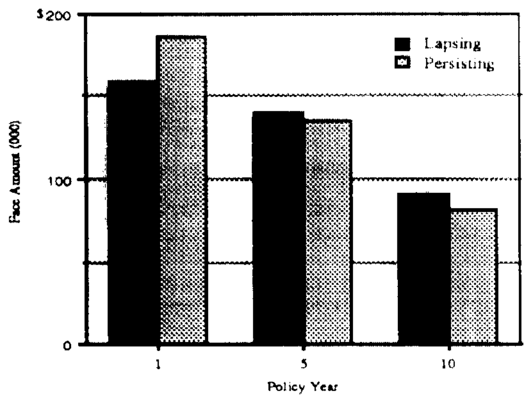


Figure 7 shows median face amount lapsing and persisting in policy years 1, 5, and 10. In general, smaller face amount policies have better persistency than those with larger face amounts (except in the first two policy years). In policy year 5 and policy year 10, the median face amount lapsing is greater than persisting. (See Table 11.)

Figure 7 — Median Face Amount Lapsing and Persisting



YRT LAPSE RATES BY UNIT OF MEASURE

TABLE 2

PERCENTAGE OF POLICIES LAPSING
(27 COMPANIES)

Policy Year	In Force (Thousands)	First Quartile	Median	Third Quartile	Unweighted Average	Weighted Average
1	440.2	13.2%	16.7%	20.7%	16.7%	18.8%
2	323.8	15.5	19.1	23.5	19.4	18.7
3	259.3	14.2	17.0	21.0	17.6	16.2
4	205.0	12.8	16.1	19.1	16.3	14.3
5	221.4	12.5	14.5	18.0	15.0	15.1
6	140.5	10.8	13.4	17.4	13.7	13.5
7	79.5	10.2	13.1	15.5	13.0	11.5
8	51.2	9.8	12.0	14.6	12.5	10.9
9	27.1	8.6	12.1	13.8	11.6	10.0
10	16.6	8.9	10.6	13.3	11.4	10.3
11 and Over	41.7	8.6	11.3	12.7	11.5	9.0

TABLE 3

PERCENTAGE OF FACE AMOUNT LAPSING
(28 COMPANIES)

Policy Year	In Force (Billions)	First Quartile	Median	Third Quartile	Unweighted Average	Weighted Average
1	$74.7	11.6%	14.9%	18.3%	15.1%	16.2%
2	54.1	15.2	18.8	22.3	19.0	17.3
3	40.5	14.2	16.9	20.8	18.5	16.0
4	30.3	12.1	15.6	20.2	17.0	14.6
5	30.3	12.3	14.6	19.1	15.6	16.0
6	18.1	10.5	13.6	19.0	14.5	13.9
7	9.5	9.7	12.3	16.2	13.7	12.1
8	5.6	9.5	12.4	15.0	12.8	11.3
9	2.9	9.2	12.3	14.8	12.4	10.4
10	1.6	9.0	11.0	13.8	11.6	10.4
11 and Over	2.2	8.5	10.7	12.5	11.5	10.3

TABLE 4

PERCENTAGE OF ANNUALIZED PREMIUM LAPSING
(23 COMPANIES)

Policy Year	In Force (Millions)	First Quartile	Median	Third Quartile	Unweighted Average	Weighted Average
1	$109.7	11.4%	16.0%	19.1%	15.3%	16.4%
2	90.3	14.6	17.9	20.8	18.2	15.2
3	73.4	13.7	16.2	21.2	18.0	14.9
4	59.7	11.7	15.0	20.9	16.5	15.6
5	75.1	11.4	13.6	18.5	15.1	14.2
6	51.5	10.6	12.5	16.4	13.7	12.2
7	32.2	9.3	12.1	17.1	12.9	12.6
8	20.7	7.8	11.7	14.5	13.0	12.0
9	10.3	9.3	11.7	15.9	13.4	12.1
10	6.6	9.0	11.4	15.7	13.2	12.6
11 and Over	13.2	8.8	12.1	14.1	13.3	11.4

TABLE 5

PERCENTAGE OF POLICIES LAPSING
(24 COMPANIES)

Policy Year	Issue Ages			
	20–29	30–39	40–49	50–59
1	23.1%	15.7%	14.8%	15.5%
2	22.2	18.4	16.8	16.2
3	19.7	16.3	14.6	17.2
4	16.6	14.9	14.4	15.0
5	16.6	13.5	15.0	14.4
6	14.5	13.0	12.0	13.0
7	12.1	12.5	12.0	14.9
8	9.9	11.8	12.0	—
9	10.1	11.0	11.7	—
10	10.6	9.8	11.4	—
11 and Over	8.7	9.3	12.0	—

—Insufficient data.

TABLE 6

PERCENTAGE OF FACE AMOUNT LAPSING
(25 COMPANIES)

Policy Year	Issue Ages			
	20–29	30–39	40–49	50–59
1	23.5%	16.5%	13.9%	13.7%
2	21.7	18.1	16.8	17.4
3	18.9	16.1	15.6	18.0
4	16.6	15.5	14.4	17.7
5	16.1	13.7	16.5	14.1
6	13.1	12.6	11.5	12.7
7	11.3	12.6	12.5	14.1
8	9.8	12.6	12.0	—
9	10.4	11.6	12.1	—
10	9.8	10.6	13.1	—
11 and Over	10.4	9.4	11.9	—

—Insufficient data.

TABLE 7

PERCENTAGE OF ANNUALIZED PREMIUM LAPSING
(21 COMPANIES)

Policy Year	Issue Ages 20–29	30–39	40–49	50–59
1	22.1%	17.3%	15.4%	15.3%
2	22.5	16.8	16.0	16.2
3	19.2	15.9	14.6	16.1
4	16.8	14.3	13.8	15.8
5	16.5	12.6	14.7	11.5
6	13.1	11.2	10.8	13.2
7	11.5	10.3	11.8	—
8	10.0	9.9	14.0	—
9	9.6	11.6	12.7	—
10	12.0	11.1	16.6	—
11 and Over	9.7	9.0	12.3	—

—Insufficient data.

YRT LAPSE RATES BY COMPANY SIZE*

TABLE 8

MEDIAN FACE AMOUNT LAPSING

Policy Year	Large	Medium-Sized	Small
1	14.9%	11.5%	17.6%
2	16.8	17.7	25.9
3	16.1	15.9	21.4
4	15.2	15.1	22.0
5	12.9	14.6	17.9
6	11.2	12.7	14.9
7	10.6	12.9	14.8
8	12.1	11.1	13.4
9	11.6	11.1	14.0
10	10.2	10.5	13.6
11 and Over	9.9	11.8	10.6

*Large companies have at least $7 billion of YRT in force (11 companies); medium-sized companies have between $2 billion and $7 billion of YRT in force (9 companies); and small companies have less than $2 billion of YRT in force (8 companies).

TABLE 9

DISTRIBUTION OF IN FORCE*

Policy Year	Number of Policies	Face Amount	Annualized Premium
1	24.6%	28.7%	27.7%
2	17.9	21.0	20.1
3	14.1	14.2	14.7
4	11.2	10.0	11.1
5	12.4	11.6	11.4
6	7.9	6.6	6.8
7	4.4	3.2	3.6
8	2.8	1.9	2.1
9	1.5	0.9	1.1
10	0.9	0.6	0.6
11 and Over	2.3	1.3	0.8
	100.0%	100.0%	100.0%

*Includes companies supplying data for all policy years.

TABLE 10

DISTRIBUTION OF LAPSES*

Policy Year	Number of Policies	Face Amount	Annualized Premium
1	29.0%	19.6%	22.9%
2	22.4	16.7	17.5
3	14.9	13.1	12.6
4	10.2	11.3	12.1
5	11.6	11.8	11.9
6	6.1	9.2	7.9
7	2.7	7.1	6.1
8	1.5	4.4	3.6
9	0.7	2.3	1.8
10	0.4	1.4	1.3
11 and Over	0.5	3.1	2.3
	100.0%	100.0%	100.0%

*Includes companies supplying data for all policy years.

TABLE 11

AVERAGE FACE AMOUNT*
(27 COMPANIES)

Policy Year	Median		Unweighted Average	
	Lapsing	Persisting	Lapsing	Persisting
1	$159,000	$186,000	$161,000	$186,000
2	159,000	166,000	164,000	170,000
3	163,000	159,000	171,000	158,000
4	159,000	149,000	164,000	155,000
5	140,000	136,000	155,000	147,000
6	126,000	118,000	134,000	129,000
7	112,000	113,000	134,000	122,000
8	100,000	96,000	101,000	99,000
9	96,000	92,000	102,000	96,000
10	91,000	82,000	90,000	87,000
11 and Over	90,000	90,000	87,000	88,000

*Rounded to the nearest 1,000 dollars.

TABLE 12

AVERAGE ANNUALIZED PREMIUMS*
(23 COMPANIES)

Policy Year	Median		Unweighted Average	
	Lapsing	Persisting	Lapsing	Persisting
1	$340	$400	$360	$380
2	370	440	390	410
3	420	410	450	430
4	470	440	470	460
5	460	470	480	480
6	430	470	490	480
7	440	480	510	500
8	530	500	530	530
9	580	520	570	490
10	570	450	560	500
11 and Over	640	530	670	570

*Rounded to the nearest 10 dollars.

LAPSE RATES OF COMPANIES REPORTING ALL THREE MEASURES

TABLE 13

MEDIAN LAPSE RATES BY UNIT OF MEASURE (21 COMPANIES)

Policy Year	Number of Policies	Face Amount	Annualized Premium
1	17.5%	14.9%	16.5%
2	19.2	17.8	17.5
3	15.8	16.4	16.2
4	15.5	15.2	15.0
5	14.5	14.8	13.6
6	13.2	13.0	12.5
7	13.0	12.3	12.1
8	11.9	12.1	11.7
9	11.5	11.9	11.6
10	10.6	11.2	10.9
11 and Over	10.6	10.6	10.9

TABLE 14

UNWEIGHTED LAPSE RATES BY UNIT OF MEASURE (21 COMPANIES)

Policy Year	Number of Policies	Face Amount	Annualized Premium
1	16.7%	14.7%	15.3%
2	19.5	18.9	18.0
3	17.5	18.8	17.8
4	16.0	16.8	16.2
5	14.9	15.5	14.8
6	13.4	13.9	13.4
7	12.8	13.6	12.9
8	12.4	12.6	12.9
9	11.5	12.2	12.7
10	11.6	12.0	12.5
11 and Over	10.6	10.5	11.3

APPENDIX A
DEFINITIONS

In-Force Policies

A policy is considered in force if the first premium for the new policy year is paid.

In-force business includes:

- New issues.
- Policies issued before the anniversary year under study, where the premium due at the beginning of the anniversary year is paid before the end of the grace period.

In-force business excludes:

- Policies that lapse before the beginning of the anniversary year under study, even if the policies are on extended-term or reduced paid-up status.
- Limited premium payment policies that are paid up.
- Single premium policies.

Lapses

A policy is considered a lapse if the policy is in force at the beginning of the anniversary year under study but not all of the premium that comes due during the anniversary year is paid, including the premium due on the policy's next anniversary.

Lapsed business includes:

- Policies surrendered during the anniversary year under study, including surrenders made at the end of the anniversary year (on next policy anniversaries).
- Policies where premiums come due during the anniversary year under study, including premiums that come due on the next policy anniversaries but are not paid by the end of the grace period.
- Term policies with renewal provisions that do not renew.
- Policies that go on reduced paid-up or extended-term status.

Lapsed business excludes:

- Death claims.
- Automatic premium loaned policies.
- Expiries and maturities.
- Conversions.
- Lapses during the policy year that are reinstated before or on the next policy anniversary.
- Policies not taken.
- Policies where the waiver of premium provision applies.

Example of a First-Year Lapse

A new policy is issued and the first 12 months of premium are subsequently paid but the premium due in policy month 13 is not paid by the end of the grace period (this is a first-year lapse, not a second-year lapse).

Annualized Premium

The value of premiums that would be paid if a policy remained in force for a full policy year—for example, 12 times the monthly premium or four times the quarterly premium.

Weighted Average Lapse Rate

This rate equals combined company lapse data divided by combined company in-force data; therefore, company size does affect the results.

Unweighted Average Lapse Rate

This rate equals the mean of individual company lapse rates; therefore, company size does not affect the results.

PARTICIPATING COMPANIES

Large Companies (At Least $7 Billion of YRT In Force)

Aetna Life & Casualty*
Connecticut Mutual Life*
Equitable Life of the United States*
Guardian Life of America*
John Hancock Mutual Life*
Massachusetts Mutual Life
Metropolitan Life*
Mutual Life of New York
The New England
New York Life
Prudential of America*

Medium-Sized Companies (Between $2 Billion and $7 Billion of YRT In Force)

American General Life (Texas)
Country Life
IDS Life (Minnesota)
Lutheran Brotherhood*
Mutual of Omaha*
Principal Mutual Life
Provident Mutual
Sun Life of Canada*
The Travelers*

Small Companies (Less Than $2 Billion of YRT In Force)

American United Life*
Business Men's Assurance*
Canada Life*
Horace Mann Life
Kansas City Life*
Northwestern National Life
Pacific Mutual Life
Security-Connecticut Life*

*Company participated in all three studies (included in Figure 1).