TRANSACTIONS OF SOCIETY OF ACTUARIES
1985-87 REPORTS

II. 1983–86 WHOLE LIFE LAPSATION IN THE UNITED STATES

This report contains incorrect bar graphs and should not be used. A complete copy of this report with the correct bar graphs appears in the *Transactions 1988-89-90 Reports of Mortality, Morbidity and Other Experience.*

II. 1983–86 WHOLE LIFE LAPSATION IN THE UNITED STATES*

PREFACE

This report was prepared in 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. A report on lapse rates on ordinary life insurance policies in the U.S. for 1986–87 appears as Part I. The Canadian versions of these studies appear as Parts III and IV.

INTRODUCTION

As part of the annual Long-Term Lapse Survey, LIMRA has analyzed lapse rates on whole life insurance policies each year for the past three years. The analyses looked at the lapse experience between policy anniversaries from 1983 to 1984, from 1984 to 1985, and from 1985 to 1986. Compared with prior long-term lapse studies, these periods have unusually high lapses for policies in their renewal years.

This report examines the lapse experience over the combined three-year period. Only nonpension whole life policies having fixed or indeterminate premiums, both continuous-pay and limited-pay, are included. Single-premium, graded-premium, and flexible-premium products are excluded. Interest-sensitive whole life policies where the cash values are credited with current interest are also excluded.

The study measures lapses on three bases: face amount, annualized premium, and number of policies. All companies were able to provide face amount data and more than three-fourths of the companies provided premium and policy count data (31 companies are included in this study).

The study looks at how lapse rates vary by policyowners' issue age groups and by policy year. 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-year durations consist of eight categories. Policy years 1–5 are examined separately; years 6–9 are grouped together; year 10 is looked at separately; and policies older than 10 years make up the last category.

*Copyright © 1988, Life Insurance Marketing and Research Association, Inc.

OVERVIEW OF RESULTS

Percent of Policies Lapsing

Looking at average lapse rates, there is only a three percentage point difference between policy year 1 and policy year 2 (20 percent and 17 percent, respectively). For prior long-term lapse studies, the differences between first- and second-year lapse rates were much greater. For the next seven policy years (durations 3–9), average lapse rates are nearly level, ranging from 14 percent to 15 percent. Lapse rates then decline to only 12 percent for policy year 10 and 8 percent for policy years 11 and over.

Face Amount and Annualized Premium Lapsing

Policy year 1 shows average lapse rates of 19 percent of face amount and 17 percent of annualized premium. Lapse rates are virtually level for the next four policy years (durations 2–5) at 17 percent of face amount and 16 percent of annualized premium. For policy years 6 through 9, these lapse rates pick up slightly, then ultimately decrease to 10 percent for policy years 11 and over.

Variation by Company

About one-third of the companies that have relatively low first-year lapse rates also have low tenth-year lapse rates; for another third, a high first-year lapse rate is accompanied by a high tenth-year lapse rate. The remaining third of the companies experienced either low first-year and high tenth-year lapse rates, or high first-year and low tenth-year lapse rates.

Regardless of policy year, there is considerable variation in lapse experience across companies. For policy years 1–10, one quarter of the lapse rates are below 10 percent. Another quarter of the lapse rates generally exceed 20 percent.

For policies in force for more than 10 years, companies still lost an average of 8 percent of their policies and 10 percent of their face amount and premium. Large companies lost about 8.4 percent of face amount as compared with 11.6 percent for small companies—the average 1972 lapse experience for all participating companies was less than 3 percent.

THE DETAILS

The following section shows how the average (mean) percentage of policies and the percentage of face amount lapsing vary by policy year. For the remainder of this report, lapse rates are based on face amount, unless stated otherwise.

In calculating summary statistics, such as the mean percentage of policies lapsing, each company receives equal weight as long as the company has a minimum number of policies in force. The Appendix includes detailed tables and definitions used to determine lapses.

Mean Lapse Rates by Policy Year

Figure 1 shows average percentages of policies lapsing for 29 companies, while Figure 2 shows average percentages of face amount lapsing for 31 companies. These average lapse rates decline during the first four policy years, then increase slightly during the fifth policy year, and ultimately level off at 8 percent of policies and 10 percent of face amount for policies more than 10 years old. See Table 1 for details. Table A in the Appendix shows median lapse rates.

Figure 1 — Policy Count Lapse Rates

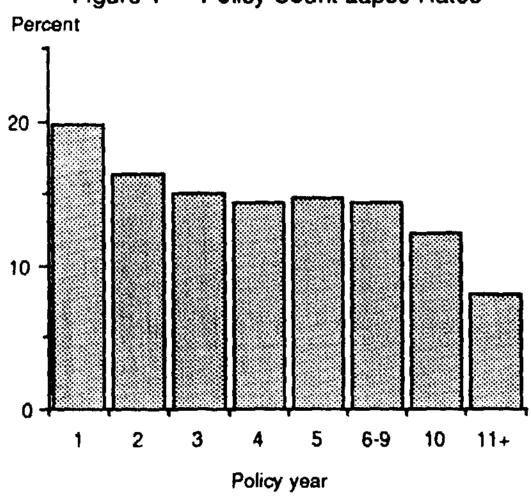


Figure 2 — Face Amount Lapse Rates

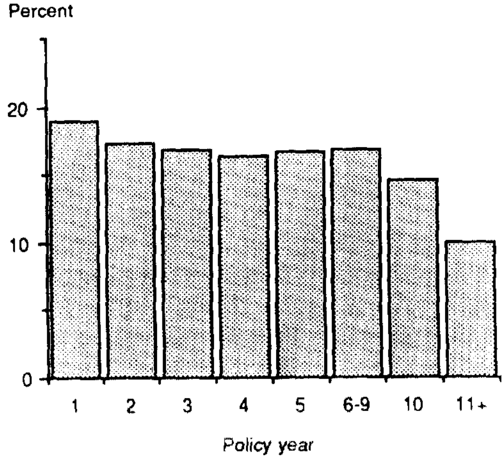


TABLE 1

LIMRA 1983–1986 LAPSE RATES BY POLICY YEAR

Policy Year	Mean Lapse Rates: Number of Policies	Mean Lapse Rates: Face Amount
1	19.8%	19.0%
2	16.4	17.0
3	15.0	16.8
4	14.4	16.5
5	14.7	16.7
6–9	14.4	17.0
10	12.3	14.8
11 and over	8.0	10.0

Variation in Lapse Rates

Figure 3 shows (for selected years) mean lapse rates by policy year for two groups of companies, "size 1" and "size 2." Size 1 companies are those with at least \$5 billion of whole life insurance in force (13 companies); size 2 companies are those with less than \$5 billion of whole life insurance in force (18 companies). In the first 10 policy years, lapse rates for the size 1 companies in this study tend to be five to six percentage points lower than those for the size 2 companies. For policies more than 10 years old, the difference diminishes to approximately three percentage points (see Table B).

Figure 3 — Variation by Company Size

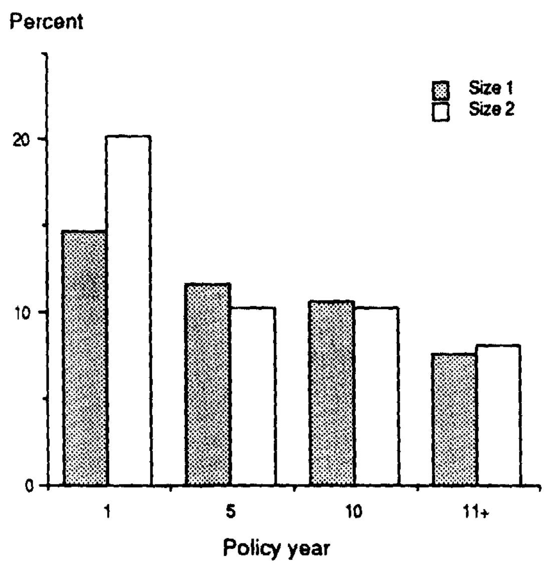
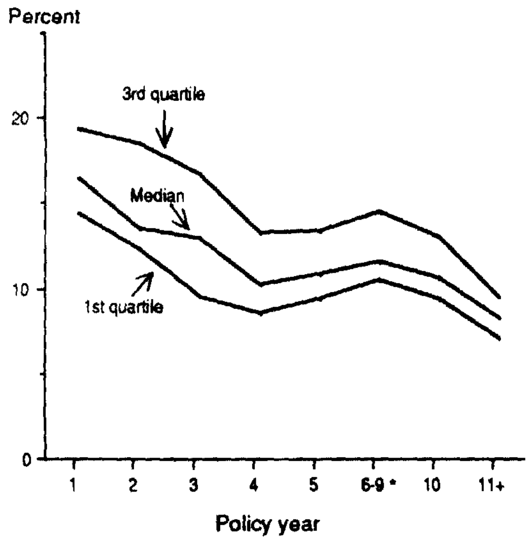


Figure 4 illustrates the variation of lapse rates across all 31 companies. Half of the companies have first-year lapse rates ranging from 10 percent to 25 percent. After the tenth policy year, half of the companies have lapse rates ranging from 7 percent to 11 percent (see Table C).

Figure 4 — Variation Across Companies



Lapse Rates by Issue Age and Lapse Measure

Figure 5 shows first-year and tenth-year lapse rates by issue age. As in the past, relatively younger insureds tend to produce higher lapse rates. The first-year lapse rates decrease from 26.2 percent for issue ages 20–29 to 12.6 percent for issue ages 50–59. This trend toward higher lapse rates among younger insureds continues into later policy years but becomes less pronounced. By the tenth policy year, lapse rates decline to 16.4 percent and 11.2 percent for issue ages 20–29 and 50–59, respectively (see Table E).

Figure 5 — Mean Lapse Rates by Issue Age

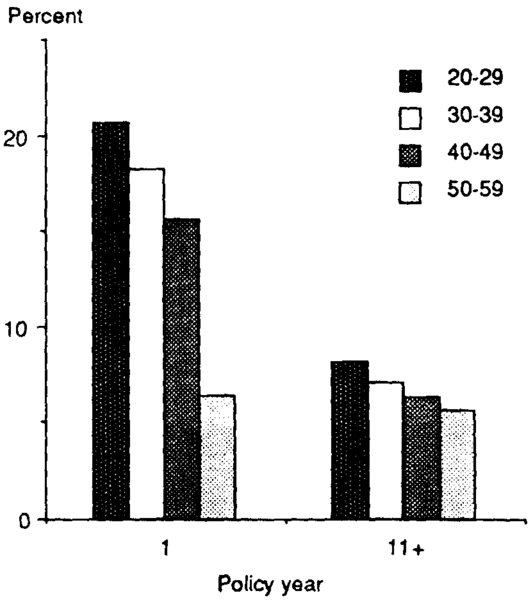
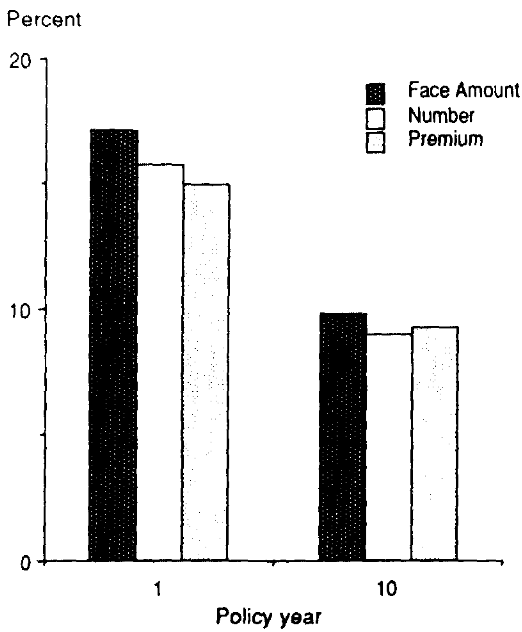


Figure 6 compares the percentage of policies lapsing with the percentage of face amount and annualized premium lapsing for both new issues and policies in their tenth year. In spite of many changes, such as higher lapses for policies in their renewal years, the pattern of these results matches patterns of previous LIMRA long-term lapse studies: In the first policy year, the average policy-count lapse rate is higher than the face-amount rate and the face-amount rate is higher than the premium lapse rate. This implies that relatively high face-amount, high premium policies have lower first-year lapse rates than lower face-amount policies with lower premiums. In renewal years, the policy-count lapse rates tend to be lower than premium lapse rates and premium lapse rates tend to be slightly lower than face-amount lapse rates (see Figures 7 and 8 and Table G).

Figure 6 — Mean Lapse Rates by Measure
(companies reporting all three measures)



Average Policy Size

For policy years 3 and over, both the average face amount and the average size premium on lapsing policies are larger than the averages on policies remaining in force. This anomaly may be partly a result of unusual replacement activity during this time period. Figures 7 and 8 illustrate the pattern for selected policy years.

Figure 7 shows the average face amount per policy for policies that did not lapse and for policies that did lapse. In policy year 1, the average face amount persisting is slightly greater than the average size policy lapsing (see Table H).

Figure 7 — Mean Face Amount
Persisting and Lapsing
(000)

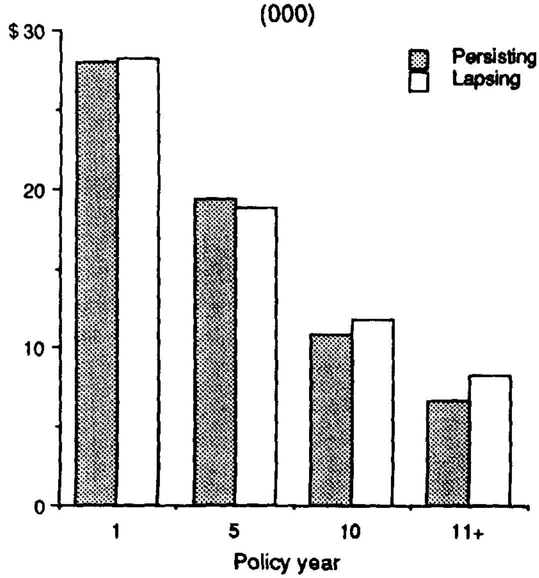
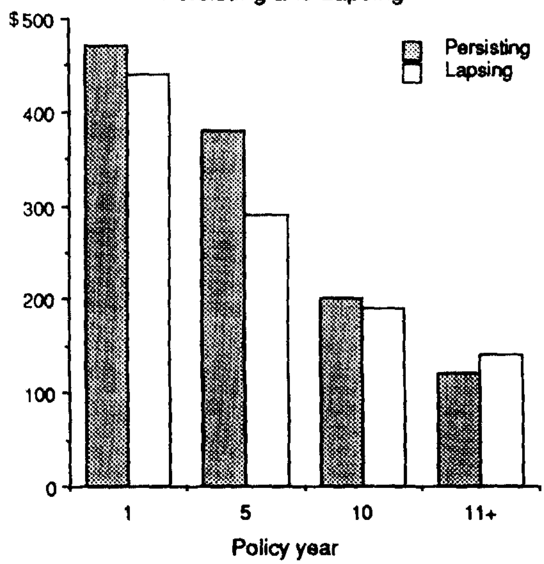


Figure 8 shows the same pattern for annualized premiums: Average annualized premium on *lapsing* policies in renewal years tends to be higher than annualized premium on policies remaining in force. For new issues, annualized premium on *persisting* policies tends to be higher than premium on lapsing policies (see Table I).

Figure 8 — Mean Annualized Premium
Persisting and Lapsing



A Period of High Lapsation

Table 2 compares excerpts from LIMRA 1983–1986 lapse rates in this study with excerpts from some popular historical tables. Compared with prior LIMRA long-term lapse studies, the period from 1983 to 1986 has unusually high lapsation in the renewal years. The first-year lapse rate is not unusual; however, the renewal lapse rates are generally two to four times higher than the renewal lapse rates in these historical studies.

TABLE 2

COMPARISON OF VARIOUS LAPSE TABLES
(PERCENTAGE OF POLICIES LAPSING)

Policy Year	Linton Tables			Moorhead Tables			LIMRA Tables		
	A	B	C	R	S	T	'71–'72	'77–'78	'83–'86
1......	10.4%	20.4%	30.4%	7.0%	12.5%	20.0%	20.0%	16.4%	19.8%
5......	4.7	8.7	12.7	2.8	3.0	4.0	4.9	5.5	14.7
10......	3.6	6.1	8.6	1.7	2.4	3.0	2.8	3.6	12.3

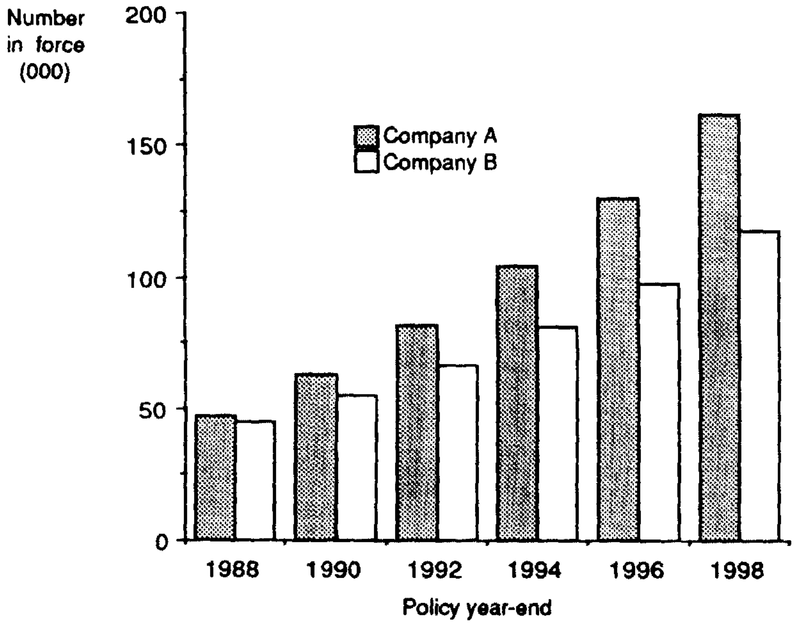
The Linton tables were published by M.A. Linton in 1924 in the *Record of the American Institute of Actuaries*.* The Moorhead tables were published by E.J. Moorhead in 1960 in the *Transactions of the Society of Actuaries*.†

WHAT HIGH LAPSATION MEANS DOWN THE ROAD

To see how lapsation affects a company's in-force business, consider two hypothetical companies using some of the LIMRA lapse rates as summarized in Table 2. In 1988 each company has 100,000 policies in force; 15,000 are new issues and 85,000 are renewing policies. From 1989 through 1998, sales increase 10 percent each year, so in 1998 each company is writing 38,906 new policies. Let's assume Company A experiences LIMRA '71–'72 lapse rates, while Company B experiences LIMRA '83–'86 lapse rates over the next 10 years.

*Linton, M.A. "Returns under Agency Contracts," *RAIA* XII (1924): 283–319.
†Moorhead, E.J. "The Construction of Persistency Tables," *TSA* XII (1960): 545–63.

Figure 9 — Effect of Lapses on Policies in Force



By the end of 1998, Company A has nearly 237,000 policies in force, while Company B has fewer than 157,000 policies in force. Each company writes over 275,000 new policies from 1988 through 1998, but the low-renewal-lapse Company A has a net gain of nearly 152,000 policies in force, compared with fewer than 72,000 policies for the high-renewal-lapse Company B.

The upshot: The high lapse company would have to sell nearly 175,000 more policies over the 1988-1998 period to achieve the same number of policies remaining in force as the low lapse company. This is equivalent to sustaining an annual sales growth rate of 17.4 percent—selling 420,000 policies instead of 275,000 policies from 1988 through 1998—to end up with 237,000 policies in force. Furthermore, this comparison does not address the much higher acquisition costs for new issues versus the costs involved for renewing business.

APPENDIX

TABLES

Table A presents LIMRA 1983–1986 median lapse rates. The remaining tables present lapse rates illustrated in Figures 3–8 of this report, in more detail.

TABLE A

MEDIAN LAPSE RATES BY POLICY YEAR

Policy Year	Median Lapse Rates	
	Number	Face Amount
1	20.0%	19.3%
2	15.4	16.7
3	15.2	15.3
4	13.5	15.0
5	13.5	14.4
6–9	12.4	16.3
10	10.9	12.9
11 and over	6.7	9.1

TABLE B

VARIATION IN LAPSE RATES BY COMPANY SIZE
(PERCENTAGE OF FACE AMOUNT LAPSING)

Policy Year	Median Lapse Rates	
	Size 1	Size 2
1	16.2%	21.3%
2	13.3	19.9
3	13.5	19.2
4	13.7	18.5
5	13.7	18.9
6–9	12.8	20.0
10	11.5	17.1
11 and over	8.4	11.6

TABLE C

VARIATION IN LAPSE RATES ACROSS COMPANIES
(PERCENTAGE OF FACE AMOUNT LAPSING)

Policy Year	Mean	Median	Range of Middle 50 Percent	
			Low	High
1	19.0%	19.3%	10.2%	25.3%
2	17.0	16.7	10.2	21.4
3	16.8	15.3	11.8	21.8
4	16.5	15.0	9.9	22.5
5	16.7	14.4	10.8	21.6
6–9	17.0	16.3	11.0	20.4
10	14.8	12.9	10.2	18.2
11 and over .	10.0	9.1	7.0	11.2

TABLE D

MEAN PERCENTAGE OF POLICIES LAPSING BY ISSUE AGE

Policy Year	Issue Age			
	20–29	30–39	40–49	50–59
1	26.4%	21.2%	17.2%	13.5%
2	22.5	19.4	14.5	10.5
3	20.3	17.7	12.9	9.9
4	18.8	17.3	13.0	10.0
5	18.7	17.4	13.2	10.3
6–9	18.5	16.7	12.0	8.7
10	15.5	13.1	9.8	7.3
11 and over .	9.7	7.8	5.9	4.4

TABLE E

MEAN PERCENTAGE OF FACE AMOUNT LAPSING BY ISSUE AGE

Policy Year	Issue Age			
	20–29	30–39	40–49	50–59
1	26.2%	19.5%	15.6%	12.6%
2	22.2	18.4	15.2	12.7
3	21.1	18.7	15.8	13.3
4	20.0	18.3	15.7	14.1
5	19.5	18.4	15.3	14.6
6–9	19.8	18.3	15.1	13.3
10	16.4	15.0	13.2	11.2
11 and over .	11.3	9.5	8.2	6.9

TABLE F

MEAN PERCENTAGE OF ANNUALIZED PREMIUM LAPSING BY ISSUE AGE

Policy Year	Issue Age 20–29	30–39	40–49	50–59
1	27.0%	21.4%	16.6%	12.8%
2	23.1	19.6	16.0	12.9
3	22.3	19.7	16.2	13.4
4	21.3	19.5	16.4	14.7
5	20.9	19.6	16.4	15.6
6–9	21.4	19.9	16.2	13.9
10	17.4	15.0	13.5	12.5
11 and over .	11.9	10.0	8.8	7.3

TABLE G

COMPARISON OF MEAN LAPSE RATES BY MEASURE (COMPANIES REPORTING ALL THREE MEASURES)

Policy Year	Number of Policies	Face Amount	Annualized Premium
1	20.3%	19.3%	17.2%
2	16.8	17.1	16.1
3	15.3	17.0	16.5
4	14.8	17.0	16.0
5	15.1	17.4	16.6
6–9	15.0	18.2	17.4
10	12.8	15.7	15.4
11 and over. . .	8.2	10.5	10.0

TABLE H

MEAN FACE AMOUNT PERSISTING AND LAPSING

Policy Year	Persisting	Lapsing
1	$36,500	$32,600
2	36,000	34,900
3	29,800	35,500
4	27,200	32,200
5	23,600	27,800
6–9	17,600	21,700
10	13,900	17,500
11 and over	8,700	11,900

TABLE I

MEAN ANNUALIZED PREMIUM PERSISTING AND LAPSING

Policy Year	Persisting	Lapsing
1	$830	$530
2...........	820	680
3...........	650	710
4...........	640	700
5...........	610	680
6–9.........	450	540
10...........	340	410
11 and over	200	270

DEFINITIONS

Lapse Rate

Lapse rates are calculated by dividing the amounts lapsing by the corresponding amount in force. In calculating summary statistics for this report, each company's results receive equal weight, provided a minimum exposure criterion is met.

Policies lapsing because of nonpayment of premium are considered to lapse in the duration for which they were last in force, even if the grace period extends into the next policy year.

In Force

A policy is considered in force if the first premium at the beginning of the anniversary 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 lapsed 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.

Lapse

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, i.e., on next policy anniversaries.
- Policies where a premium comes due during the anniversary year under study, including the premium that comes due on the next policy anniversaries, but is not paid by the end of the grace period.
- Policies that go on reduced-paid-up or extended-term status.

Lapsed business excludes:

- Death claims.
- Automatic premium loaned policies.
- Lapses during the policy year that are reinstated before or on the next policy anniversary.
- Policies not taken.

CONTRIBUTING COMPANIES

Aetna Life & Casualty
Alfa Life*
American United Life
Baltimore Life
Business Men's Assurance
Canada Life (U.S.)
Connecticut Mutual Life
Equitable Life of the United States
Fidelity Union Life
Guardian Life of America
Horace Mann Life
IDS Life (Minnesota)
Jefferson-Pilot Life†
John Hancock Mutual Life
Liberty Life (South Carolina)
Lutheran Brotherhood

*Federated Guaranty at the time of the study.
†Jefferson Standard and Pilot Life made individual contributions.

Massachusetts Mutual Life
Metropolitan Life
Monumental Life
MONY
Northwestern Mutual Life
Principal Mutual Life
Prudential of America
Security-Connecticut Life
Security Life of Denver
Sun Life of Canada (U.S.)
Transamerica Occidental Life (California)
The Travelers
United of Omaha Life
USAA Life