IV. 1983–86 WHOLE LIFE LAPSATION IN CANADA*†

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 Canada for 1986–87 appears as Part III. The United States versions of these studies appear as Parts I and II.

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 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 policies 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: number of policies, face amount, and annualized premium. Nearly all companies were able to provide policy count data and face amount data and more than three-fourths of the companies provided premium data (13 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

†This report replaces the one that appears in the *1985-86-87 Reports of Mortality, Morbidity and Other Experience*; that report contains incorrect bar graphs and should not be used.

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.

OVERVIEW OF RESULTS

Percentage of Policies Lapsing

For average lapse rates, there is only a three percentage point difference between policy years 1 and 2 (16 percent and 13 percent, respectively). For the next eight policy years (durations 3–10), average lapse rates are nearly level, ranging from 10 percent to 11 percent. The average lapse rate ultimately declines to 6 percent for policy years 11 and over.

Face Amount and Annualized Premium Lapsing

Policy year 1 shows average lapse rates of 17 percent of face amount and 15 percent of annualized premium. Face amount and premium lapse rates decrease to approximately 10 percent for policy years 4 and 5. For policy years 6–9, lapses on relatively large size policies increase—the average percent of face amount lapsing increases two percentage points. For policy years 11 and over, the face amount and premium lapse rates average around 7 percent to 8 percent.

Variation by Company

There is considerable variation in lapse experience by company. For example, one quarter of the companies experienced first-year lapse rates below 14 percent, while another quarter experienced lapse rates above 19 percent. The average first-year lapse rate for large companies was approximately 15 percent, while the average first-year lapse rate for small companies was 20 percent.

More than half of the companies having relatively low first-year lapse rates also have relatively low tenth-year lapse rates. Four companies experienced the opposite of what might be expected—two experienced low first-year lapse rates and high tenth-year lapse rates, and two experienced high first-year and low tenth-year lapse rates.

For policies in force for more than 10 years, companies still lost an average of 7.8 percent of their in-force business. Larger companies lost about 7.6

percent of face amount as compared with 8.0 percent for smaller companies—the average 1977 lapse rate for all participating companies was less than 3 percent.

THE DETAILS

The next 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, average 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

Figures 1 and 2 show average lapse rates by age of policies as measured by the percentage of policies lapsing and the percentage of face amount lapsing (respectively) for all 13 companies. These average lapse rates decline during the first four policy years, then increase for policy years 5 and 6–9. For policy years 11 and over, these rates decline to 6 percent of policies and 8 percent of face amount. See Table 1 for details. Table A in the Appendix shows median lapse rates.

Figure 1 — Policy Count Lapse Rates

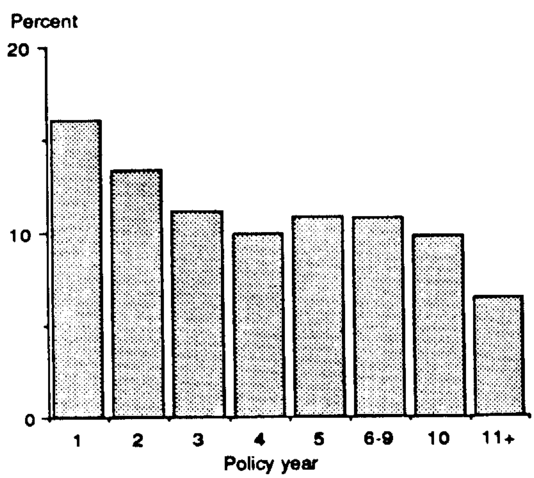


Figure 2 — Face Amount Lapse Rates

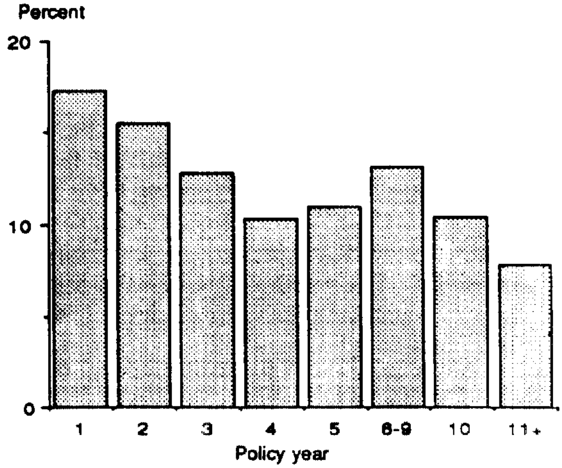


TABLE 1

LIMRA 1983–1986 LAPSE RATES BY POLICY YEAR

Policy Year	Mean Lapse Rates: Number of Policies	Mean Lapse Rates: Face Amount
1	16.1%	17.3%
2	13.3	15.5
3	11.1	12.8
4	9.9	10.3
5	10.8	10.9
6–9	10.7	13.1
10	9.7	10.4
11 and over...	6.4	7.8

Variation in Lapse Rates

Figure 3 shows (for selected years) mean lapse rates for two groups of companies. "Size 1" companies are those with more than $1 billion of whole life insurance in force (six companies); "size 2" companies are those with less than $1 billion of whole life insurance in force (seven companies). The first-year lapse rate for size 1 companies is more than five percentage points lower than that for size 2 companies. The difference in lapse rates is less than two percentage points for policy years 3 and over (see Table B).

Figure 3 — Variation by Company Size

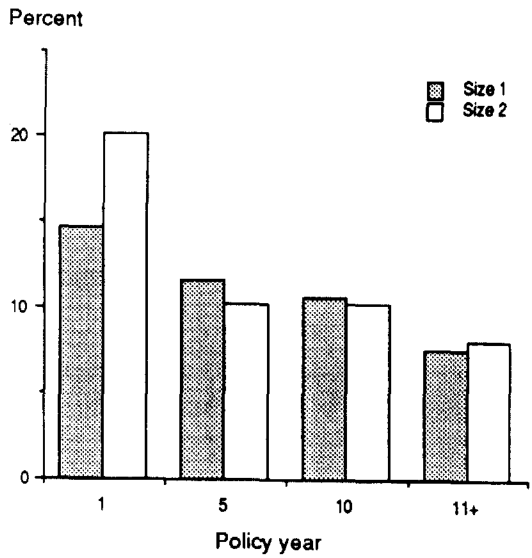
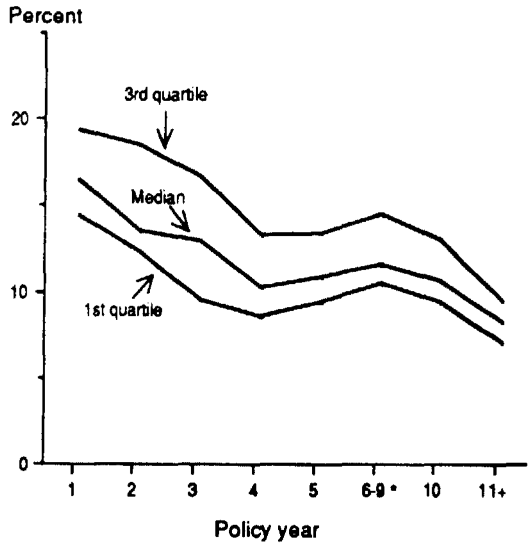


Figure 4 illustrates the variation of lapse rates across all 13 companies. Half the companies have first-year lapse rates ranging from 14 percent to 19 percent. After the tenth policy year, the spread narrows; for policy years 11 and over, half the companies have lapse rates ranging from 6.6 percent to 9 percent (see Table C).

Figure 4 — Variation Across Companies



*Data for policy years 6 through 9 were collected in aggregate form.

Lapse Rates by Issue Age and Lapse Measure

Figure 5 shows average lapse rates by issue age for policy year 1 and policy years 11 and over. As in the past, relatively younger insureds tend to produce higher lapse rates. The first-year lapse rate ranges from 21 percent for issue ages 20–29, to 16 percent for issue ages 40–49, then decreases to 6.4 percent for issue ages 50–59. This trend toward higher lapse rates among younger insureds continues into later policy years but becomes less pronounced. In policy years 11 and over, lapse rates level off at approximately 8 percent and 6 percent for issue ages 20–29 and 40–49, respectively, and 5.6 percent for issue ages 50–59 (see Table E).

Figure 5 — Mean Lapse Rates by Issue Age

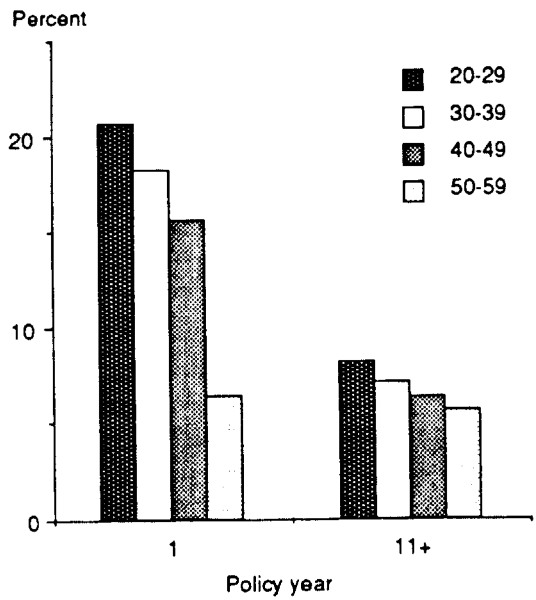
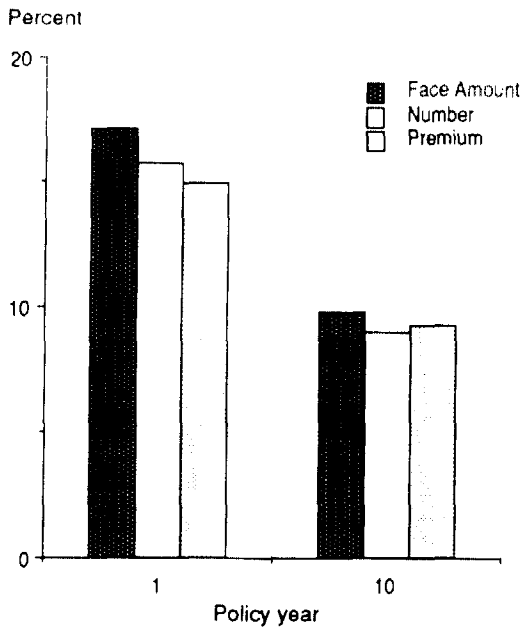


Figure 6 compares the percentage of face amount lapsing with the percentage of policies and annualized premium lapsing for policy years 1 and 10. The average first-year face-amount rate is slightly higher than the policy-count lapse rate, and the policy-count lapse rate is slightly higher than the annualized premium lapse rate. This implies that relatively high-face-amount, low-premium policies have higher first-year lapse rates than lower-face-amount policies with higher premiums. For policies in their tenth year, there is less variation; average lapse rates range between 9 percent and 10 percent (see Table G).

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



Average Policy Size

For policy years 11 and over, both the average face amount and average premium on lapsing policies are larger than average sizes on policies remaining in force. This result may be partly due to 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 the first policy year there is little difference between the average size policy persisting and the average size policy lapsing. In policy years 11 and over, the average size policy lapsing is about 25 percent larger than the average size policy persisting (see Table H).

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

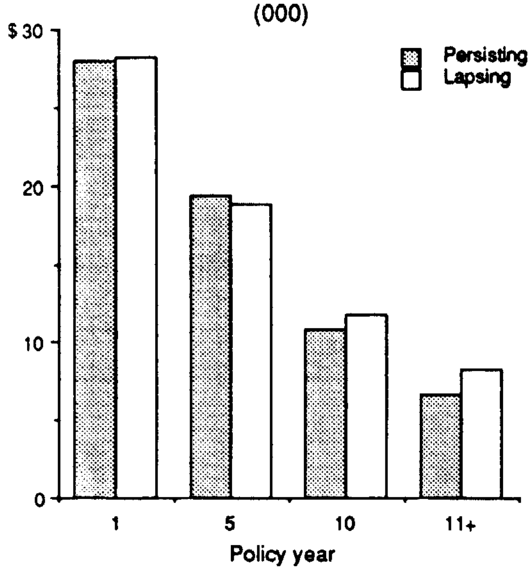
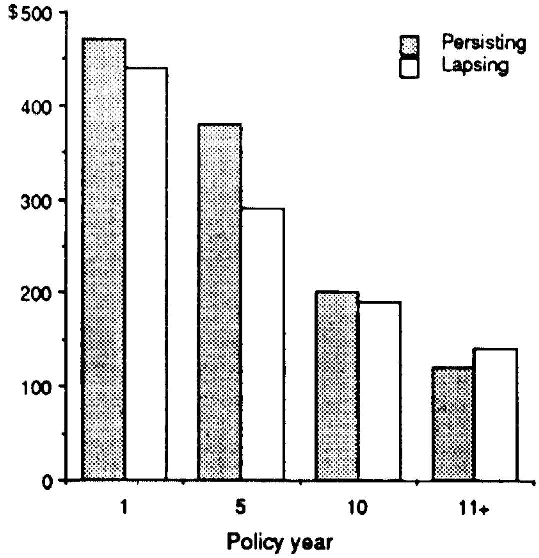


Figure 8 shows the pattern for annualized premiums. The greatest difference occurs in the fifth policy year where the average size premium on persisting policies is about 30 percent larger than the average size premium on lapsing policies. One company had an unusually large average size premium for persisting policies in policy year 5. Without this company, the average size premium for persisting policies is only about 6 percent larger than that for lapsing policies. The difference diminishes for policies more than 5 years old (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)

	Linton Tables			Moorhead Tables			LIMRA Tables	
Policy Year	A	B	C	R	S	T	1976–1977	1983–1986
1	10.4%	20.4%	30.4%	7.0%	12.5%	20.0%	12.7%	16.1%
5	4.7	8.7	12.7	2.8	3.0	4.0	4.2	10.8
10	3.6	6.1	8.6	1.7	2.4	3.0	3.1	9.7

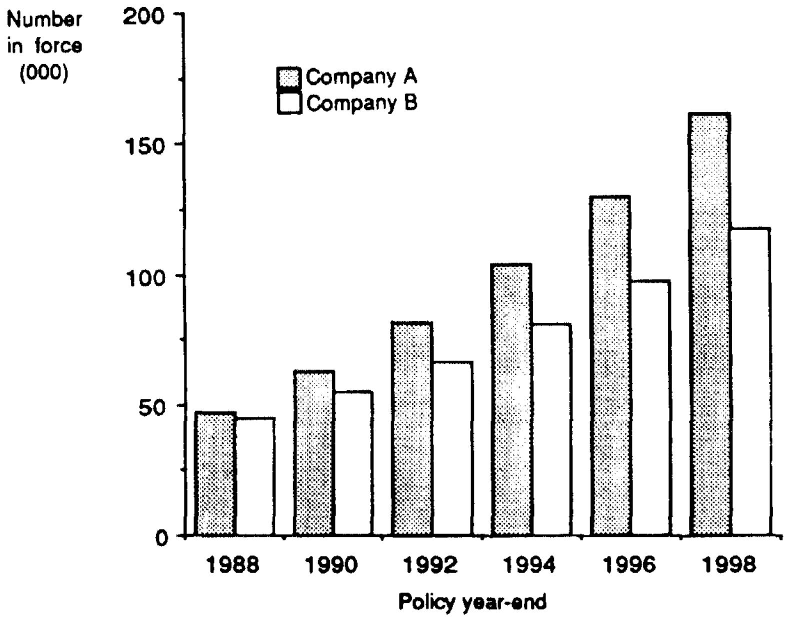
The Linton tables were published by M.A. Linton in 1924 in the *Record of the American Institute of Actuaries*.* The Moorhead tables were published in 1960 in the *Transactions of the Society of Actuaries*.†

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 50,000 policies in force; 10,000 are new issues and 40,000 are renewing policies. From 1989 through 1998, sales increase 10 percent each year, so in 1998 each company is writing 25,937 new policies. Let's assume Company A experiences LIMRA 1976–1977 lapse rates, while Company B experiences LIMRA 1983–1986 lapse rates over the next 10 years.

*Linton, M.A. "Returns under Agency Contracts," *RAIA* XIII (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 162,000 policies in force, while Company B has fewer than 120,000 policies in force. Each company writes over 185,000 new policies from 1988 through 1998, but the low-renewal-lapse Company A has a net gain of nearly 122,000 policies in force, compared with fewer than 80,000 policies for the high-renewal-lapse Company B.

The upshot: The high-lapse company would have to sell nearly 80,000 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 15.7 percent—selling 253,000 policies instead of 185,000 policies from 1988 through 1998—to end up with 162,000 policies in force. Furthermore, this comparison does not address the much higher acquisition costs for new issues versus the costs 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
(PERCENTAGE OF FACE AMOUNT LAPSING)

Policy Year	Median Lapse Rates	
	Number	Face Amount
1	15.9%	15.9%
2	12.7	13.0
3	11.9	12.4
4	9.7	9.7
5	10.6	10.3
6–9	10.4	11.0
10	9.2	10.1
11 and over	6.4	7.8

TABLE B

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

Policy Year	Mean Lapse Rates	
	Size 1	Size 2
1	14.6%	20.1%
2	14.5	16.6
3	11.9	13.7
4	10.4	10.3
5	11.6	10.3
6–9	12.3	13.7
10	10.6	10.3
11 and over	7.6	8.0

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	17.3%	15.9%	13.8%	18.8%
2	15.5	13.0	11.8	18.0
3	12.8	12.4	9.0	16.2
4	10.3	9.7	8.0	12.7
5	10.9	10.3	8.8	12.9
6–9	13.1	11.0	10.0	13.9
10	10.4	10.1	8.8	12.5
11 and over .	7.8	7.8	6.6	9.0

TABLE D

MEAN PERCENTAGE OF POLICIES LAPSING BY ISSUE AGE

Policy Year	Issue Age			
	20–29	30–39	40–49	50–59
1	18.5%	15.0%	11.8%	6.7%
2	16.0	13.6	9.7	4.9
3	14.4	11.8	7.6	4.3
4	11.8	10.0	7.3	4.5
5	12.8	11.3	7.8	5.4
6–9	13.1	10.8	8.0	5.8
10	11.8	10.2	7.2	—
11 and over .	6.9	5.8	5.0	4.0

—Insufficient exposure.

TABLE E

MEAN PERCENTAGE OF FACE AMOUNT LAPSING BY ISSUE AGE

Policy Year	Issue Age			
	20–29	30–39	40–49	50–59
1	20.6%	18.2%	15.6%	6.4%
2	18.0	16.7	14.8	5.4
3	16.0	13.7	9.8	8.1
4	13.3	11.8	10.1	6.8
5	13.4	11.7	8.4	8.8
6–9	13.7	12.3	10.2	8.1
10	12.3	11.5	8.0	—
11 and over .	8.1	7.1	6.3	5.6

—Insufficient exposure.

TABLE F

MEAN PERCENTAGE OF ANNUALIZED PREMIUM LAPSING BY ISSUE AGE

Policy Year	Issue Age 20–29	30–39	40–49	50–59
1	19.9%	16.3%	13.9%	5.2%
2	16.8	15.7	13.2	5.4
3	14.6	13.4	9.1	10.1
4	12.4	11.6	10.5	7.7
5	13.0	11.6	9.2	9.2
6–9	12.3	10.9	9.1	7.8
10	11.3	9.9	—	—
11 and over .	7.6	6.6	5.7	5.3

—Insufficient exposure.

TABLE G

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

Policy Year	Face Amount	Number of Policies	Annualized Premium
1	17.1%	15.7%	14.9%
2	15.7	13.0	13.9
3	12.9	11.1	11.9
4	10.2	10.0	10.1
5	10.6	10.5	9.5
6–9	12.6	10.0	10.8
10	9.8	9.0	9.3
11 and over. . .	7.1	5.9	7.2

TABLE H

MEAN FACE AMOUNT PERSISTING AND LAPSING

Policy Year	Persisting	Lapsing
1	$28,000	$28,200
2	22,800	25,100
3	20,800	22,900
4	20,700	19,800
5	19,300	18,800
6–9	13,300	17,100
10	10,800	11,700
11 and over	6,600	8,200

TABLE I

MEAN ANNUALIZED PREMIUM PERSISTING AND LAPSING

Policy Year	Persisting	Lapsing
1.	$470	$440
2.	360	380
3.	350	370
4.	330	320
5.	380	290
6–9.	240	240
10.	200	190
11 and over	120	140

DEFINITIONS

Lapse Rate

Lapse rates are calculated by dividing the amounts lapsing by the corresponding amount in force. In calculating summary statistics in 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

Canada Life
COLONIA Life
Commercial Union Life of Canada
Co-operators Life
Halifax Life
Industrial-Alliance Life*
Imperial Life of Canada
Metropolitan Life (Canada)
National Life of Canada
New York Life (Canada)
Standard Life (Canada)
Sun Life of Canada

*Alliance Mutual contributed to the 1983–1984 and 1984–1985 studies.