TRANSACTIONS OF SOCIETY OF ACTUARIES 1991-92 REPORTS

II. 1988–89 LONG-TERM ORDINARY LAPSE SURVEY IN CANADA*

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. The 1989–90 version of this study appears as Part IV; the 1988–89 United States version of this study appears as Part I; and the 1989–90 United States version as Part III. Part V is "A Long-Term Look at Yearly Renewable Term Lapsation in the United States, 1987–1990 Experience."

INTRODUCTION

Annual Survey

This annual long-term lapse study examines the lapsation of ordinary insurance in Canada between 1988 and 1989 policy anniversaries. It is designed to assist companies with developing new products and in monitoring marketing and product performance.

Lapse rates in this report are percentage of face amounts and number of policies in force at the beginning of 1988 policy anniversaries that lapse on or before 1989 policy anniversaries. (See Appendix A for the definitions used in this study.)

Lapse rates by face amount and number of policies are measured for six types of ordinary insurance plans:

- Traditional whole life
- Interest-sensitive whole life
- Permanent term
- Five-year renewable term (5-YRT)
- Ten-year renewable term (10-YRT)
- Level face amount term (excluding 5-YRT and 10-YRT).

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There are two changes in the product data: (1) data were collected for 10-YRT; and (2) the definition of permanent term includes level face amount term products with level premiums to age 65 or older. In the past those products included only products with level premiums to age 100.

Lapse rates are measured for policy years 1, 2, 3-5, 6-10, and 11 and over. These policy years correspond to issue years 1988, 1987, 1986–1984, 1983–1979, and 1978 and earlier.

In-Depth Survey

The report also presents an in-depth look at lapse rates for 5-YRT based on:

- Number of policies
- Face amount
- Annualized premium.

Lapse rates and average size policies are analyzed for individual policy years 1-10 and combined policy years 11 and over.

This section of the report also looks at trends among a constant group of companies that participated in this year's and last year's studies.

ABOUT THE SAMPLE

Twelve companies participated in this study. Eleven of these companies provided both face amount lapsing and the number of policies lapsing; one company provided only face amount lapsing. Table A shows the total face amount in force at the beginning of the 1988–1989 policy year; Table B shows the total number of policies in force.

TABLE A

FACE AMOUNT IN FORCE (BILLIONS) ON 1988 ANNIVERSARIES (12 COMPANIES)

	Traditional	Interest- Sensitive	Permanent		Level Term		
Issue Year Whole Life	Whole Life	Term	5-YRT	10-YRT	Other		
1988* Before 1988	\$ 5.2 32.1	\$ 3.6 15.7	\$2.0 3.7	\$ 2.5 14.8	\$3.2 4.3	\$0.4 1.8	
Total In Force	\$37.3	\$19.3	\$5.7	\$17.3	\$7.5	\$2.2	

*For issue year 1988, amounts in force on 1988 anniversaries correspond to amounts sold during that year.

TABLE B

NUMBER OF POLICIES IN FORCE (THOUSANDS) ON 1988 ANNIVERSARIES (11 COMPANIES)

	Traditional	Interest- Sensitive	Permanent		Level Term	
	Whole Life	Whole Life	Term	5-YRT	10-YRT	Other
1988* Before 1988	112 1,929	67 341	19 43	19 134	19 27	1 14
Total In Force	2,041	408	62	153	46	15

*For issue year 1988, amounts in force on 1988 anniversaries correspond to amounts sold during that year.

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LAPSE RATES BY PRODUCT TYPE

Table C summarizes median face amount lapse rates by policy year. Table D summarizes median policy count lapse rates by policy year.

TABLE C

PERCENTAGE OF FACE AMOUNT LAPSING BY PRODUCT TYPE (12 COMPANIES)

	Traditional		Permanent		Level Term	
Policy Year	Whole Life	Sensitive Whole Life	Term	5-YRT	10-YRT	Other
1	11.6%	13.1%	7.7%	16.8%	8.6%	
2	9.2	12.2	10.1	15.5	8.3	11.5%
3-5	7.9	9.6	8.8	14.4	11.9	12.3
6-10	6.9	12.9	_	12.7		13.7
11 and Over	4.9			11.7	-	9.6

- Insufficient data.

TABLE D

PERCENTAGE OF POLICIES LAPSING BY PRODUCT TYPE (11 COMPANIES)

	Traditional	Interest- Sensitive	Permanent		Level Term	
Policy Year	Whole Life	Whole Life	Term	5-YRT	10-YRT	Other
1	12.2%	14.5%	11.6%	15.2%	9.9%	
2	9.0	12.1	9.2	15.6	11.0	
3–5	7.9	9.0	9.7	16.1	12.6	14.5%
6-10	7.4	13.0	-	13.2		13.7
11 and Over	5.2			12.4		7.1

- Insufficient data.

LAPSE RATES BY FACE AMOUNT AND NUMBER OF POLICIES

Figure 1 shows median lapse rates by face amount and number of policies for *traditional whole life*. Lapse rates measured by number of policies exceed lapse rates measured by face amount in all policy years except for policy year 2. Lapse rates by both measures decrease in the later durations.



Figure 2 shows median lapse rates by face amount and number of policies for *interest-sensitive whole life*. Median face amount lapse rates range from 9.6 percent to 13.1 percent. Lapse rates by number of policies range from 9.0 percent to 14.5 percent. Lapse rates for policy years 11 and over are not shown because of insufficient data.



Policy Year

Figure 3 shows median lapse rates for *permanent term* insurance (products with level premiums to age 65 or older). Because of insufficient data in policy years 6 and over, lapse rates are shown only for the first three durations. Lapse rates by face amount increase from policy year 1 to policy year 2 and then decrease in policy years 3–5. Lapse rates by number of policies decrease during the first two durations and increase slightly in the third duration.



Figure 4 shows median lapse rates by face amount and number of policies for *five-year renewable term* (5-YRT) insurance. Lapse rates are highest in policy years 3–5. Note that a policy not renewing in the first month of the premium increase (61st month) is considered a fifth-policy-year lapse (see Appendix A for definitions of lapses). Lapse rates as measured by face amount are lower than lapse rates as measured by number of policies in all but the first policy year. This lapse pattern indicates that, in later durations, larger policies have better persistency than smaller policies.



Figure 5 shows lapse rates for *10-year renewable term* (10-YRT) insurance. Lapse rates measured by number of policies exceed lapse rates measured by face amount in all durations. Again, these lapse rates indicate that larger policies have better persistency than smaller ones. Lapse rates by both measures are highest in policy years 3–5.



Figure 6 shows median lapse rates by face amount for *level face amount* term (excluding 5-YRT and 10-YRT). Because of insufficient data on number of policies, only face amount lapse rates are shown. Lapse rates gradually increase from 11.5 percent in policy year 2 to 13.7 percent in policy years. 6–10, decreasing to 9.6 percent in policy years 11 and over.



AVERAGE FACE AMOUNT PERSISTING AND LAPSING

Table E provides average* face amount persisting and lapsing for traditional whole life, five-year renewable term, and ten-year renewable term. For traditional whole life, the average face amount persisting is greater than the average face amount lapsing in all policy durations except durations of 11 years or more. For five-year renewable term, average face amount lapsing is less than average face amount persisting in policy years 1, 2, and 3–5. The average face amount lapsing for ten-year renewable term is greater than the average face amount persisting only in policy years 3–5.

TABLE E

AVERAGE FACE AMOUNT PERSISTING AND LAPSING FOR TRADITIONAL WHOLE LIFE (11 COMPANIES)

	Traditional	Whole Life	Five-Year Renewable Term		Ten-Year Rei	newable Term
Policy Year	Persisting	Lapsing	Persisting	Lapsing	Persisting	Lapsing
1	\$39,798	\$36.049	\$184.807	\$124,169	\$176,723	\$152,051
2	44,520	42,122	177,160	141.621	186,342	149,311
3-5	40,280	39,603	150,598	149,759	190,714	220,810
6-10	21,674	21,520	99,207	101,170		l <u> </u>
11 and Over	9,056	9,636	54,323	62,990		l —

- Insufficient data.

TRENDS IN WHOLE LIFE LAPSE RATES

Figure 7 shows median lapse rates by face amount for a constant group of companies that participated in the past three studies (data years 1987–1989). Lapse rates for each successive year have decreased in all durations except the first policy year. The greatest overall decrease occurs in policy years 3–5:from 1987 to 1989 lapse rates decline 2.8 percentage points. In policy year 1, lapse rates increase from 11.1 percent in 1987 to 11.7 percent in 1988 and decrease to 11.2 percent in 1989.



TRENDS IN FIVE-YEAR RENEWABLE TERM LAPSE RATES

Figure 8 shows median lapse rates by face amount for a constant group of companies that participated in the past three studies (data years 1987–1989). In 1989 lapse rates were generally lower than in the prior two years and showed less variation by duration. In 1989 lapse rates went from a high of 13.7 percent in policy year 1 to 12.4 percent in policy years 11 and over, a range of 1.3 percentage points, compared with ranges of 4 percentage points in 1988 and 7.1 percentage points in 1987.



VARIATION OF LAPSES AMONG COMPANIES

Figure 9 shows the variation of *whole life* lapse rates across companies. In policy year 1, lapse rates range from 8.4 percent to 21.3 percent. In policy years 11 and over, lapse rates range from 3.8 percent to 12.1 percent.



Figure 9 -- Variations of Whole Life Lapse Rates (Based on face amount)

Figure 10 shows the variation of face amount lapse rates for 5-YRT. In policy year 1, lapse rates range from 7.2 percent to 36.1 percent. In policy years 11 and over, lapse rates range from 8.3 percent to 32.1 percent, with a median lapse rate of 11.7 percent.





Figure 11 shows the variation of face amount lapse rates for *10-YRT*. In the first two policy years, more than half of the companies had lapse rates under 10 percent. During policy years 3–5 lapse rates ranged from 9.1 percent to 15.3 percent.



Figure 11 -- Variations of 10-YRT Lapse Rates (Based on face amount)

A DETAILED LOOK AT LAPSE RATES (INDIVIDUAL PRODUCTS)

Lapse Rates by Face Amount

TABLE 1

TRADITIONAL WHOLE LIFE (12 COMPANIES)

Policy Year	Low	Median	High	Average*
1 2 3-5 6-10 11 and Over	8.4 7.4 5.6 4.1 3.8	11.6 9.2 7.9 6.9 4.9	21.3 16.9 15.3 15.8 12.1	13.0 10.7 8.8 8.1 6.4
All	5.8	8.3	15.7	8.7

*All companies receive equal weight in averages; company size does not affect the results.

TABLE 2

INTEREST-SENSITIVE WHOLE LIFE (7 COMPANIES)

	(, соминись)						
Policy Year	Low	Median	High	Average*			
1 2 3-5 6-10	6.4 5.6 6.1 6.2	13.1 12.2 9.6 12.9	16.2 12.7 17.7 15.0	12.2 10.7 11.3 11.2			
All	6.0	11.5	16.4	11.1			

*All companies receive equal weight in averages; company size does not affect the results.

TABLE 3

Permanent Term (10 Companies)

Policy Year	Low	Median	High	Average*
1	2.4	7.7	29.2	9.6
2	2.5	10.1	26.6	10.1
3-5	1.5	8.8	16.2	8.4
All	2.3	9.2	20.6	9.3

TABLE 4

FIVE-YEAR RENEWABLE TERM* (11 COMPANIES)

Policy Year	Low	Median	High	Average†
1 2 3-5 6-10 11 and Over	7.2 10.5 10.6 4.5 8.3	16.8 15.5 14.4 12.7 11.7	36.1 37.5 38.3 36.5 32.1	17.2 17.4 18.3 14.2 14.2
All	9.8	13.8	36.9	16.0

*One company's data were excluded because of atypical experience.

does not affect the results.

TABLE 5

TEN-YEAR RENEWABLE TERM* (9 COMPANIES)

Policy Year	Low	Median	High	Average†
1	4.0	8.6	15.2	8.7
2	5.0	8.3	17.8	10.0
35	9.1	11.9	15.3	11.6
All	6.0	9.1	14.6	9.7

*One company's data were excluded because of atypical experience.

†All companies receive equal weight in averages; company size does not affect the results.

TABLE 6

Level Term (Excluding 5-YRT and 10-YRT)* (8 Companies)

Policy Year	Low	Median	High	Averaget
2	8.5	11.5	37.6	17.3
3–5	4.2	12.3	47.8	18.8
6-10	4.4	13.7	22.1	13.6
1 and Over	4.1	9.6	12.1	9.0
All	7.2	11.6	34.8	15.6

*One company's data were excluded because of atypical experience. †All companies receive equal weight in averages; company size does not affect the results.

Lapse Rates by Number of Policies

TABLE 7

Traditional Whole Life (11 Companies)

Policy Year	Low	Median	High	Average*
1 2 3-5 6-10 11 and Over	9.6 8.0 5.3 4.9 3.2	12.2 9.0 7.9 7.4 5.2	28.7 20.9 17.0 14.6 11.0	13.4 10.6 8.5 8.3 5.8
All	4.9	6.4	15.4	7.6

*All companies receive equal weight in averages; company size does not affect the results.

TABLE 8

INTEREST-SENSITIVE WHOLE LIFE (7 COMPANIES)

(, commune)				
Policy Year	Low	Median	High	Average*
1	5.8	14.5	17.6	13.0
2	5.7	12.1	14.5	11.3
3–5	5.1	9.0	20.9	11.2
6–10	7.2	13.0	16.9	12.1
All	5.5	11.2	19.6	11.5

*All companies receive equal weight in averages; company size does not affect the results.

TABLE 9

Permanent Term (9 Companies)

(* 666.111.11.15)				
Policy Year	Low	Median	High	Average
1	3.6	11.6	27.5	11.2
2	5.2	9.2	25.3	11.2
3–5	4.7	9.7	17.4	9.8
All	4.4	10.4	20.7	10.2

TABLE 10

FIVE-YEAR RENEWABLE TERM (11 COMPANIES)

Policy Year	Low	Median	High	Average*
1	5.3	15.2	46.6	18.3
2	11.8	15.6	44.7	19.1
3–5	11.4	16.1	39.9	18.5
6-10	5.2	13.2	28.9	13.9
11 and Over	6.0	12.4	29.7	12.7
All	10.4	13.9	36.5	16.0

*All companies receive equal weight in averages; company size does not affect the results.

TABLE 11

TEN-YEAR RENEWABLE TERM (9 COMPANIES)

Policy Year	Low	Median	High	Average*
1	4.9	9.9	16.2	9.3
2	1.5	11.0	16.7	10.4
3–5	5.5	12.6	15.2	11.5
All	5.4	10.7	15.1	10.2

*All companies receive equal weight in averages; company size does not affect the results.

TABLE 12

Level Term (Excluding 5-YRT and 10-YRT) (7 Companies)

Policy Year	Low	Median	High	Average*
3–5 6–10 11 and Over	5.1 3.9 2.0	14.5 13.7 7.1	47.0 27.0 14.3	18.8 13.9 7.1
All	5.1	10.4	28.3	13.6

IN-DEPTH SURVEY-FIVE-YEAR RENEWABLE TERM

Lapse Rates by Policy Year

TABLE 13

PERCENTAGE OF POLICIES LAPSING (9 COMPANIES)

Policy Year	Median	Average*	
1	15.2%	20.0%	
2	15.9	20.4	
3	13.9	17.3	
4	12.5	15.2	
5	16.8	23.1	
6	21.4	20.3	
7	13.7	14.5	
8	10.8	10.8	
9	10.6	12.8	
10	15.6	17.4	
11 and Over	12.4	12.6	

 11 and Over
 12.4
 12.6

 *All companies receive equal weight in averages; company size does not affect the results.

TABLE 14

Percentage of Face Amount Lapsing (10 Companies)

Policy Year	Median	Average
1	14.1%	16.6%
2	13.0	16.7
3	11.4	14.9
4	11.6	14.5
5	14.8	22.1
6	19.4	19.3
7	10.4	13.6
8	10.4	10.8
9	9.8	11.4
10	16.0	17.8
11 and Over	12.4	14.7

TABLE 15

PERCENTAGE OF ANNUALIZED PREMIUM LAPSING (8 COMPANIES)

Policy Year	Median	Average"
1	13.1%	18.3%
2	11.6	17.7
3	12.3	16.0
4	10.5	12.0
5	18.0	27.7
6	18.9	20,4
7	11.2	16.0
8	8.0	11.4
9	8.5	10.7
10	13.0	17.3
11 and Over	11.1	14.1

*All companies receive equal weight in averages; company size does not affect the results.

Distribution of In Force and Lapses

TABLE 16

DISTRIBUTION OF IN FORCE			
Policy Year	Number of	Face	Annualized
	Policies	Amount	Premium
1	12.7%	15.5%	11.8%
2	12.0	13.9	9.9
3	12.4	14.5	9.8
4	11.2	12.1	11.6
5	11.9	12.2	12.4
6	8.3	8.4	10.4
7	7.4	6.8	8.1
8	6.6	6.3	7.2
9	3.8	3.2	4.4
10 11 and Over	3.4 10.3 100.0%	2.4 4.7 100.0%	3.3 11.1 100.0%

Policy Year	Number of Policies	Face Amount	Annualized Premium
1	14.3%	15.2%	10.2%
2	14.1	15.1	9.7
3	12.2	13.6	9.4
4	9.8	10.7	8.8
5	13.8	13.7	15.3
6	10.0	11.1	14.6
7	6.4	6.3	8.0
8	4.7	4.6	5.3
9	2.8	2.3	2.6
10	3.5	2.9	4.1
11 and Over	8.4	4.5	12.0
Γ	100.0%	100.0%	100.0%

TABLE 17

_		-
DISTRIBUTION	OF	LAPSES

Average Size Policy Lapsing and Persisting

TABLE 18

Face Amounts (9 Companies)

Policy Year	Median		Average*	
	Lapsing	Persisting	Lapsing	Persisting
1	\$116.623	\$169.252	\$117,566	\$149,841
2	117,704	155,310	125,526	150,639
3	112,551	137,733	118,246	144,381
4	122,588	132,387	118,882	131,423
5	124,416	116,970	123,593	123,848
6	112,775	126,493	111,084	116,036
7	108,836	104,198	103,779	105,294
8	99,860	107,242	98,682	111,874
9	87,481	93,208	92,552	94,558
10	84,459	82,864	87,871	85,994
11 and Over	62,713	52,871	61,945	53,582

TABLE 19

Policy Year	Median		Average*	
	Lapsing	Persisting	Lapsing	Persisting
1	\$293	\$375	\$314	\$364
2	277	377	289	361
3	257	308	257	297
4	281	483	292	418
5	444	402	450	367
6	424	420	436	408
7	368	337	363	328
8	385	356	419	388
9	271	388	308	390
10	374	333	435	361
11 and Over	373	346	404	326

ANNUALIZED PREMIUMS (8 COMPANIES)

*All companies receive equal weight in averages; company size does not affect the results.

Lapse Rates for Constant Group of Companies

TABLE 20

MEDIAN RATES FOR CONSTANT COMPANIES (6 COMPANIES)

Policy Year	Number of Policies		Face Amount	
	1988	1989	1988	1989
4	14.8%	12.8%	11.2%	11.6%
5	18.0	16.7	16.5	13.6
6	18.6	21.4	22.0	19.4
7	12.9	13.7	13.4	10.4
8	11.5	10.8	13.9	10.4
9	9.6	10.2	9.7	9.8

APPENDIX A

DEFINITIONS

In-Force Policies

A policy is considered in force if the first premium for the new policy year starting in 1988 is paid.

In-force business includes:

- Policies issued in 1988
- Policies issued prior to 1988 where the premium due on the 1988 policy anniversary date is paid before the end of the grace period.

In-force business excludes:

- Policies that lapsed prior to their 1988 anniversary and are on extended term or reduced paid-up status
- Limited premium payment policies that are paid up
- Single premium policies.

Examples of in-force policies are:

- A policy issued in 1988 and the first premium is paid
- A policy issued in 1987 and the premium due in the 13th policy month is paid
- A policy issued in 1986 and the premium due in the 25th policy month is paid.

Lapses

A policy is considered a lapse if the first premium for the new policy year starting in 1988 is paid, but not all of the premium that comes due after the 1988 anniversary and before or on the 1989 anniversary date is paid.

Lapsed business includes:

- Policies surrendered after their 1988 anniversaries and before or on their 1989 anniversaries
- Policies where a premium due after the 1988 anniversary and before or on the 1989 anniversary date is not paid by the end of the grace period
- Term policies with renewable provisions that do not renew
- Policies that go on reduced paid-up or extended-term status.

Lapsed business exludes:

- Death claims
- Automatic premium loaned policies
- Expiries and maturities
- Conversions
- Policies that lapse during the 1988–1989 policy year but are reinstated before or on their 1989 anniversaries
- Policies not taken
- Policies where the waiver of premium provision applies.

Examples of lapsed policies are:

- A policy issued in 1988 with the first premium paid. If any premium for policy months 2 through 13 is not paid by the end of the grace period, the policy is a lapse.
- A policy issued in 1987 with the 13th policy month premium paid. If any premium for policy months 14 through 25 is not paid by the end of the grace period, the policy is a lapse.

• A policy issued in 1986 with the 25th policy month premium paid. If any premium for policy months 26 through 37 is not paid by the end of the grace period, the policy is a lapse.

Example of a policy that is not lapsed:

• A policy issued in 1987 is not considered a lapse if the 13th policy month premium and all premiums for policy months 14 through 25 are paid.

PRODUCT DEFINITIONS

Traditional Whole Life

- Includes: Fixed cash value products including continuous pay and limited pay plans with permanent protection. Premiums may be level or indeterminate.
- Excludes: Interest-sensitive whole life
 - Universal life
 - Endowments
 - Policies that are combinations of whole life and term plans
 - Graded-premium whole life
 - Whole life plans used to fund a registered pension plan.

Five-Year Renewable Term (5-YRT)

- Includes: Level face amount products with premiums increasing every five years. This includes (1) nonparticipating products with indeterminate premiums that have two schedules of premiums—current and guaranteed, (2) nonparticipating products with guaranteed premiums, and (3) participating products paying dividends.
- Excludes: Nonlevel term (for example, decreasing term)
 - Term riders
 - Permanent term.

10-Year Renewable Term (10-YRT)

- Level face amount products with premiums increasing every 10 years. This includes (1) nonparticipating products with indeterminate premiums that have two schedules of premiums—current and guaranteed, (2) nonparticipating products with guaranteed premiums, and (3) participating products paying dividends.
- Excludes:
- Nonlevel term (for example, decreasing term)
- Term riders
- Permanent term.

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Level Face Amount Term (excluding 5-YRT and 10-YRT)

Level face amount products. This includes (1) nonparticipating prod-Includes: ucts with indeterminate premiums that have two schedules of premiums—current and guaranteed, (2) nonparticipating products with guaranteed premiums, and (3) participating products paying dividends. Five-year renewable term

Excludes:

- 10-year renewable term
- Nonlevel term (for example, decreasing term)
- Term riders
- Permanent term.

Interest-Sensitive Whole Life

- Includes: ٠ Whole life plans that credit cash values with current interest rates. Premiums may be level, may vanish, or may be adjusted periodically.
- Universal life. Excludes: ٠

Graded-Premium Whole Life

Includes: Traditional graded-premium whole life. The premium may increase annually for five to 10 years and then level off at a premium comparable to a whole life continuous-pay plan. A typical graded-premium whole life policy for a male age 30 would have a \$6 initial premium per \$1,000, gradually increasing over 10 years to an ultimate premium of \$16 per \$1,000.

Permanent Term

Includes: Level face amount term products with level premiums to age 65 or older. Death benefits or premiums for these plans may be adjusted periodically (for example, every five years) to reflect changes in interest rates, mortality, and expenses. Typically the plans build no (or little) cash value and their only nonforfeiture value may be reduced paid-up insurance.

APPENDIX B PARTICIPATING COMPANIES Canada Life* COLONIA Life* Commercial Union Life of Canada* Confederation Life* Crown Life* Equitable Life of Canada Great-West Life* Imperial Life of Canada Industrial-Alliance Life* Lutheran Life of Canada* Metropolitan Life* Sun Life of Canada*

*Company participated in both this year's and last year's studies.