

Full Report



U.S. Individual Disability Income Persistency

A Joint Study Sponsored by the
Society of Actuaries and LIMRA



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Authors

Cathy Ho
Insurance Research
860-285-7704
cho@limra.com

Steve Elek
Data Analysis
selek@limra.com



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Executive Summary

This report presents results of a study of individual disability income (“IDI”) lapse experience in the United States between observation years 2000 and 2007. This is the first report in a two-part series that will present results of a study conducted jointly by LIMRA and the Society of Actuaries (SOA) and based on data provided by 12 individual disability income insurance writers.

This first report provides an overview of results from the period 2000-2007 including an associated excel spreadsheet providing lapse rates and associated exposure levels.

The second report will discuss a more detailed analysis of results including a discussion of those factors that are the strongest drivers of lapse experience.

Key Findings

- Lapse rates for 2000-2007 for all policy years combined averaged 6.5 percent.
- Looking at trends over time, lapse rates for the period 2000-2007 were lower than those for the period 1990-1993 but higher than lapse rates for the period 1999-2001.
- By renewal type, lapse rates for all policy years combined averaged 9.1 percent for guaranteed renewable plans and 6.2 percent for non-cancelable plans.
- By policy year, lapse rates are highest during the first 4 policy years and generally decrease by policy year down to an average rate of between 4 and 5 percent by duration 10. Lapse rates begin to increase again in the latest policy years, possibly as a result of policyholders nearing retirement deciding they no longer need income protection.
- Lapse rates for female policyholders are significantly higher than male policyholders in most policy years. Larger differences are seen in the guaranteed renewable plans. Lapse rates for guaranteed renewable plans averaged 8.2 percent for males and 11.6 percent for females. Lapse rates for non-cancelable plans averaged 5.7 percent for males and 7.2 percent for females.
- Non-cancelable policies with lifetime benefits exhibited the lowest lapse rates (3.8 percent) while guaranteed renewable policies with benefits to age 65 exhibited the highest lapse rates (10.2 percent).
- Policies with shorter elimination periods (30 days or less) exhibited the lowest lapse rates, 5.9 percent for guaranteed renewable and 3.7 percent for non-cancelable plans.

Recommendations

This report examines lapse experience on individual disability income insurance products by various policyholder and product factors. The study can be used for industry benchmarking as well as for background information for product development and planning processes.

The data contained in this report can help companies identify factors that impact individual disability income insurance persistency, as well as to validate lapse assumptions. While the study contributors represent a sizable portion of the individual disability income insurance industry, they do not represent the entire industry and differences in results by company may vary. These results should be used only as a guide or supplement to the experience of the individual carriers. Companies should carefully consider underlying differences such as distribution, product design, product development, and marketing strategy between their own organizations and the contributing companies.

Detailed lapse information is contained in a separate spreadsheet and is available on both the LIMRA and the SOA websites (www.limra.com and www.soa.org).

Data Description

This study was conducted jointly by LIMRA and the Society of Actuaries (SOA) and was based on data provided by 12 individual disability income insurance writers covering calendar years 2000 – 2007. Table 1 shows the distribution of exposures by issue year and renewability condition and Table 2 lists a summary of additional exposure data characteristics.

Issue Year	Guaranteed Renewable	Non-Cancelable
Prior to 1984	9.20%	9.20%
1984 – 1987	5.70%	10.00%
1988 – 1991	10.30%	16.70%
1992 – 1995	12.00%	19.30%
1996 – 1998	17.10%	11.60%
1999	9.30%	4.90%
2000	9.80%	5.10%
2001	8.40%	5.00%
2002	6.30%	5.00%
2003	4.60%	4.00%
2004	3.10%	3.50%
2005	2.20%	2.60%
2006	1.40%	1.80%
2007	0.60%	1.20%
	100%	100%

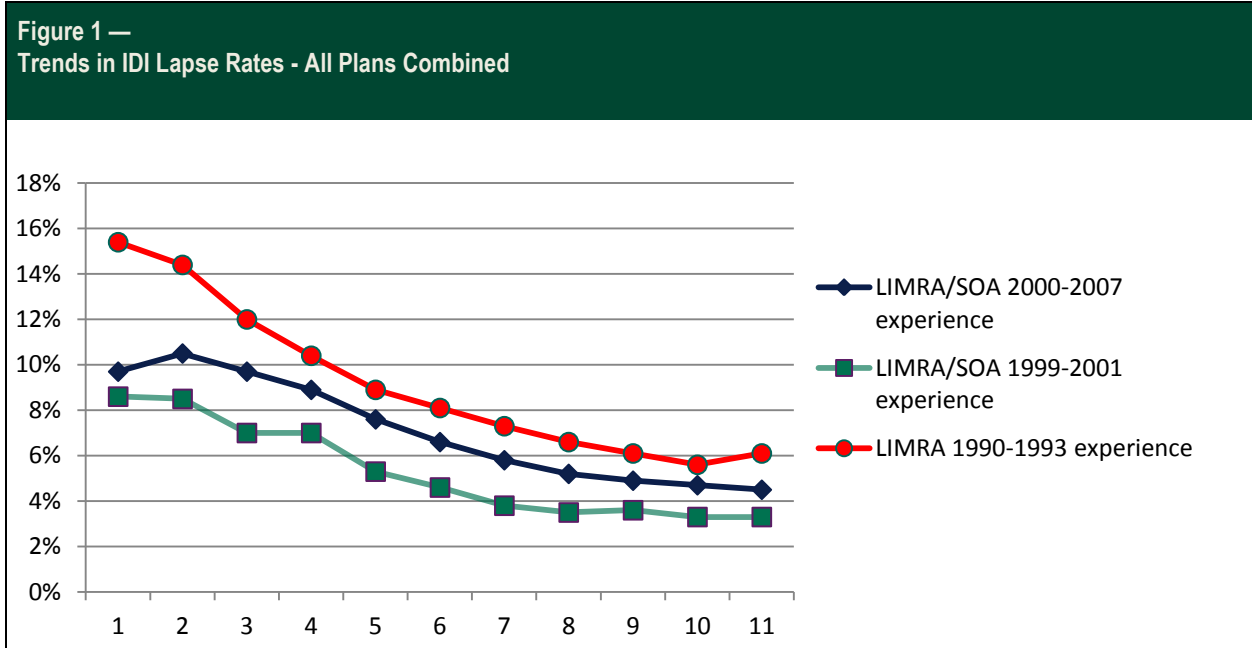
	Guaranteed Renewable	Noncancelable
Total policy exposure	12%	88%
Policy exposure in policy years 1 – 5	17%	83%
Average issue age	38	39
Average attained age	46	48
Male insured representation in the policy exposure	75%	75%
Non-smoker insured representation in policy exposure	85%	85%

Summary of Findings

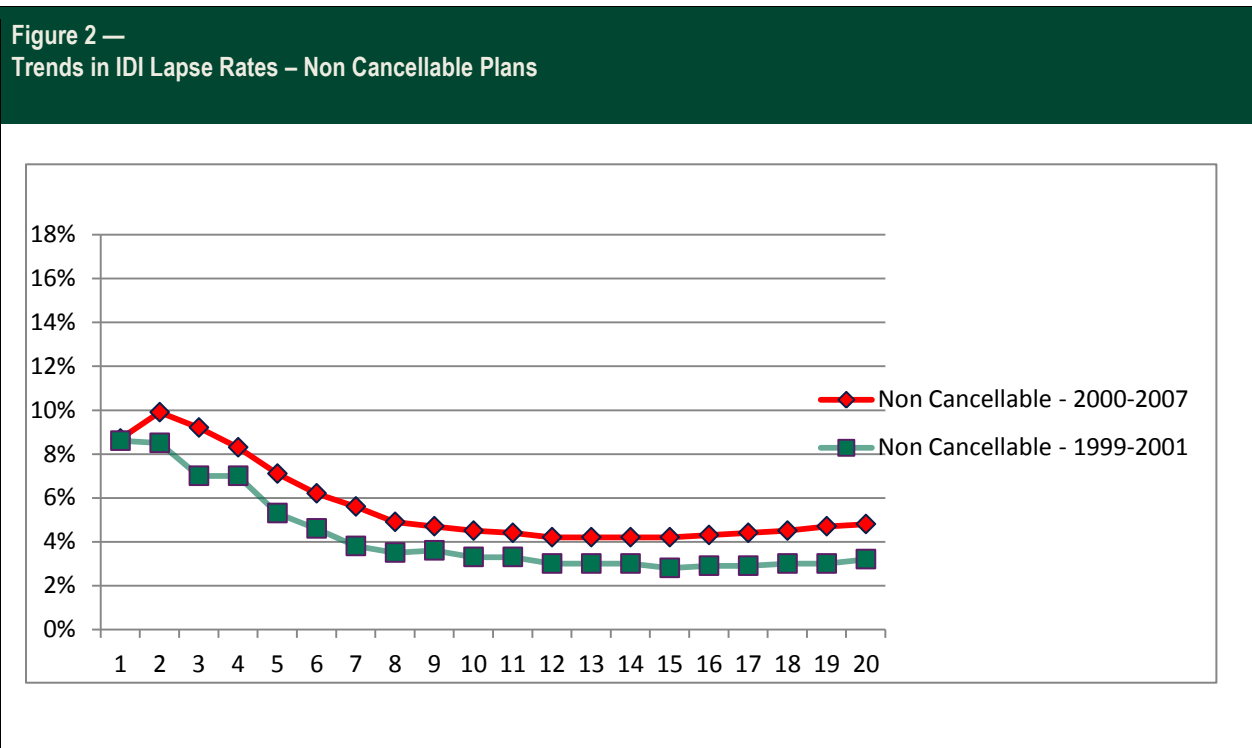
**Table 3 —
Policy Lapse Rates by Plan and by Duration**

Policy Year	All Plans Combined	Guaranteed Renewable	Non-Cancelable
1	9.7	15.2	8.7
2	10.5	14.0	9.9
3	9.7	12.5	9.2
4	8.9	12.1	8.3
5	7.6	9.8	7.1
6	6.6	8.2	6.2
7	5.8	7.4	5.6
8	5.2	6.8	4.9
9	4.9	6.1	4.7
10	4.7	5.6	4.5
11	4.5	5.0	4.4
12	4.3	4.8	4.2
13	4.3	4.6	4.2
14	4.2	4.6	4.2
15	4.3	4.6	4.2
16	4.3	4.5	4.3
17	4.3	4.3	4.4
18	4.5	4.2	4.5
19	4.6	4.3	4.7
20	4.8	4.6	4.8
21	4.9	4.8	5.0
22	5.1	4.9	5.2
23	5.3	4.7	5.5
24	5.5	4.8	5.7
25	6.0	5.2	6.2
26+	8.6	8.7	8.6
Total	6.5	9.1	6.2

Focusing on trends in individual disability income lapse experience over time, for non-cancelable and guaranteed renewable plans combined, lapse rates decreased materially between the period 1990-1993 and the period 1999-2001. However, over the period 2000-2007, lapses have settled at a level between the two earlier studies.

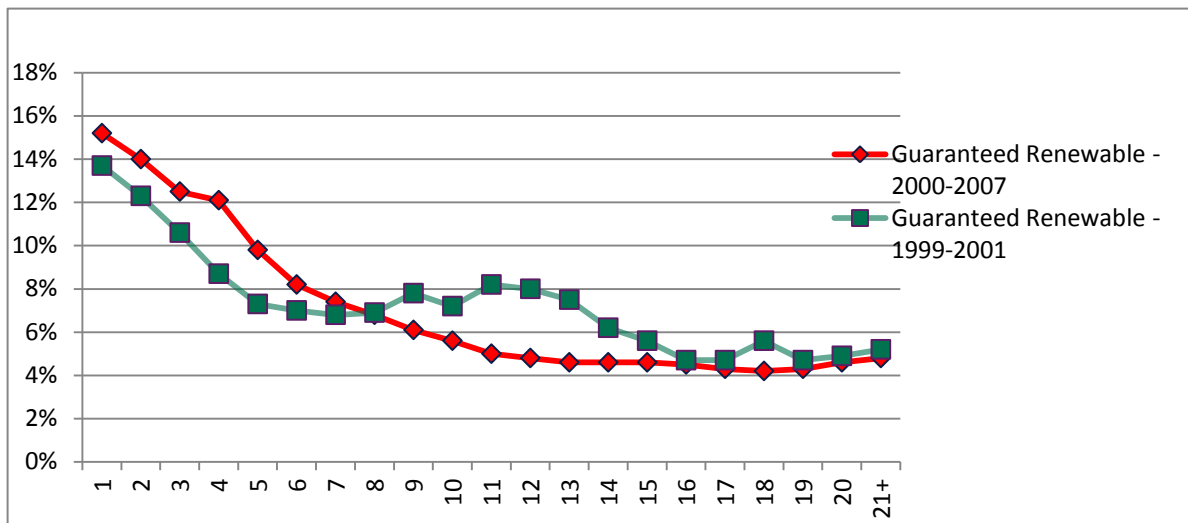


The trend in overall lapse rates is driven in large part by the non-cancelable business as shown in the chart below. Although splits of experience by renewal type were not available for the 1990-1993 experience period, lapse rates were between 1 and 1.5 percent lower during the period 1999-2001 than for the period 2000-2007.



For guaranteed renewable plans, were higher during the more recent experience period for policy durations 1 to 7 but the same or lower for policy durations 8 and later.

Figure 3 —
Trends in IDI Lapse Rates - Guaranteed Renewable Plans



The tables below provide additional lapse results by issue age group, elimination period, and gender. The accompanying excel workbook contains results presented in the report as well as lapse rates by CIDA occupation class, underwriting outcome (standard versus substandard) and underwriting type.

**Table 4 —
Policy Lapse Rates by Issue Age Group and Duration
Guaranteed Renewable Plans**

Policy Year	Under 35	35-44	45-54	55 and older
1	17.8	14.0	13.2	15.5
2	15.9	12.7	12.4	16.6
3	13.8	11.5	11.3	16.2
4	15.4	9.9	10.0	16.2
5	10.9	8.4	8.8	17.6
6	8.4	6.9	7.9	18.6
7	7.7	6.1	7.7	19.3
8	6.5	5.8	7.4	19.5
9	5.6	5.1	7.4	22.1
10	5.2	4.5	7.4	
11	4.5	4.2	8.1	
12	4.2	4.0	8.8	
13	3.8	4.0	9.8	
14	3.7	3.8	11.6	
15	3.6	4.1	12.9	
16	3.2	4.1	16.1	
17	2.9	4.2	18.5	
18	2.6	4.7	20.4	
19	2.7	5.2	23.4	
20	2.9	6.1	33.1	
21	2.6	8.6		
22	2.7	9.0		
23	2.8	8.9		
24	2.8	9.7		
25	2.7	12.6		
26+	7.6	18.1		
Total	8.6	8.3	10.3	16.9

**Table 5 —
Policy Lapse Rates by Issue Age Group and Duration
Non-Cancelable Plans**

Policy Year	Under 35	35-44	45-54	55 and older
1	10.2	7.8	7.8	9.7
2	11.3	8.7	9.0	12.3
3	10.6	7.9	8.3	12.7
4	9.8	6.9	7.6	13.4
5	7.7	6.0	7.1	14.8
6	6.4	5.4	6.6	16.2
7	5.2	4.8	6.6	18.2
8	4.4	4.1	6.4	20.4
9	3.9	3.9	6.8	23.1
10	3.5	3.8	7.3	26.7
11	3.3	3.6	8.2	17.0
12	3.0	3.5	8.7	15.0
13	2.8	3.4	9.6	15.5
14	2.6	3.4	10.5	15.9
15	2.5	3.4	12.1	17.9
16	2.4	3.6	13.5	17.7
17	2.4	3.7	15.4	
18	2.3	4.1	17.4	
19	2.3	4.5	21.4	
20	2.3	5.0	25.9	
21	2.4	6.7	17.9	
22	2.4	7.7	15.6	
23	2.5	8.6	16.7	
24	2.5	9.6	19.9	
25	2.9	11.4	23.2	
26+	6.6	18.0	26.7	
Total	5.5	5.5	8.8	14.0

**Table 6 —
Policy Lapse Rates by Elimination Period and Duration
Guaranteed Renewable Plans**

Policy Year	30 days and under	31 to 90 days	Over 90 days
1	7.7	19.5	28.8
2	6.4	19.5	28.5
3	6.0	17.6	29.3
4	7.3	15.7	30.0
5	6.4	13.6	22.1
6	5.9	11.2	16.6
7	6.0	9.6	12.4
8	6.1	7.8	9.7
9	5.7	6.4	8.2
10	5.4	5.6	7.1
11	4.9	5.1	5.7
12	4.4	5.2	5.8
13	3.9	5.8	4.9
14	4.1	5.3	6.0
15	4.2	5.2	6.5
16	3.9	5.1	7.4
17	3.6	5.6	6.5
18	3.9	4.3	6.8
19	3.8	5.0	
20	4.3	4.9	
21	4.3	5.5	
22	4.4	5.5	
23	4.2	5.8	
24	4.4	6.0	
25	4.8		
26+	8.4		
Total	5.9	12.6	20.7

**Table 7 —
Policy Lapse Rates by Elimination Period and Duration
Non-Cancelable Plans**

Policy Year	30 days and under	31 to 90 days	Over 90 days
1	5.2	11.2	7.8
2	5.7	12.9	8.9
3	6.7	11.5	8.3
4	5.2	10.4	8.0
5	4.5	9.1	6.8
6	3.2	8.3	6.3
7	2.5	7.6	5.9
8	1.8	7.1	5.4
9	1.7	7.0	5.4
10	1.8	6.7	5.5
11	1.8	6.5	5.5
12	2.0	6.1	5.4
13	2.3	6.1	5.2
14	2.4	5.9	5.5
15	2.6	5.8	5.5
16	2.8	5.8	5.6
17	3.0	5.7	5.9
18	3.2	5.8	5.9
19	3.5	6.1	6.0
20	3.6	6.4	6.1
21	4.0	6.4	6.3
22	4.2	6.7	6.9
23	4.4	7.5	7.2
24	4.7	7.8	7.1
25	5.2	8.6	8.5
26+	8.2	10.9	10.3
Total	3.7	8.2	6.9

**Table 8 —
Policy Lapse Rates by Gender and Period
Guaranteed Renewable Plans**

Policy Year	Males	Females
1	14.3	17.0
2	13.0	15.7
3	11.8	14.0
4	11.1	14.2
5	9.2	11.0
6	7.7	9.2
7	7.0	8.5
8	6.4	7.9
9	5.6	7.4
10	5.3	6.6
11	4.8	5.6
12	4.5	5.6
13	4.3	6.0
14	4.2	6.2
15	4.4	5.6
16	4.1	6.2
17	4.0	5.5
18	3.9	5.3
19	3.9	5.5
20	4.3	5.5
21	4.3	6.3
22	4.5	6.2
23	4.2	6.3
24	4.5	
25	5.0	
26+	8.5	
Total	8.2	11.6

**Table 9 —
Policy Lapse Rates by Gender and Period
Non-Cancelable Plans**

Policy Year	Males	Females
1	7.9	10.4
2	9.1	11.4
3	8.4	10.7
4	7.6	9.7
5	6.6	8.1
6	5.8	7.0
7	5.1	6.3
8	4.6	5.5
9	4.3	5.2
10	4.2	5.0
11	4.0	4.9
12	3.9	4.5
13	3.9	4.6
14	3.9	4.4
15	4.0	4.5
16	4.1	4.5
17	4.1	4.6
18	4.3	4.6
19	4.5	4.8
20	4.7	4.9
21	4.8	5.1
22	5.1	5.2
23	5.3	5.5
24	5.5	5.8
25	6.0	6.1
26+	8.5	8.0
Total	5.7	7.2

Methodology

For purposes of this report, lapse includes termination for any reason other than death. This includes termination for non-payment of premium, expiration of benefits, conversion, and terminations for an unknown reason. This is consistent with the definition of voluntary lapse applied to other LIMRA and Society of Actuaries experience studies when a material number of companies do not have reliable splits by cause of policy termination. We continue this approach for the current study as it allows us to provide a comparison of results over time.

The observation years for the study are 2000 to 2007. Contributing companies were asked to provide information on their entire in-force block at the policy level. All policies were converted to policy year for analysis.

The lapse rates shown are based on 100% of policies submitted, except in cases where a company's volume of business was so large or its experience was so different from that of other contributors such that overall industry results would be unduly skewed.

It should be noted that not all contributing companies in the study contributed data for their entire inforce block of subsidiaries and for all experience years.

In addition, it should be noted that the purpose of the original data collection was to support a study of IDI morbidity experience and several companies were not able to provide data for all policies and product factors requested for a lapse study. Therefore, care should be taken in interpreting the results.

Lapse rates are calculated as follows:

$$\text{Annualized Policy Lapse Rate} = 100\% \times \frac{\text{Number of Policies Lapsed During the Year}}{\text{Number of Policies Exposed to Lapse During the Year}}$$

The number of policies exposed to lapse is based on the length of time the policy is exposed to the risk of lapsation during the year. Lapses contribute exposure for the full 12 months. Terminations due to death are not included in the amounts lapsing and contribute to exposure for only the fraction of the policy year they were in force. *The individual company data underlying this study produces a pattern of voluntary lapses by policy year that indicates some deaths may have been coded incorrectly as lapses.*

Industry lapse rates are calculated as a weighted average of the experience of all contributing companies; companies with larger in-force blocks will affect the overall results more than companies with smaller in-force blocks. However, results for each policy factor analyzed are also examined at the company level to ensure that reported experience is not overly affected by one or more large participant blocks.

Lapse rates are not reported for any data cell for which there were fewer than three companies *or* less than 1,000 policies exposed.

Experience was reported exactly as calculated. No attempts were made to level or smooth results.

Participating Companies

Berkshire Life Insurance Company	Mutual of Omaha
Guardian Life Insurance Co.	Northwestern Mutual Life Insurance Company
Illinois Mutual Life Insurance Company	Principal Life Insurance Company
Massachusetts Casualty Insurance Company	RiverSource Life Insurance Company
Massachusetts Mutual Insurance Company	Standard Life Insurance Company
Monarch Life Insurance Company	Unum Group



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