**A 2005 Report**

# U.S. INDIVIDUAL LIFE PERSISTENCY UPDATE

## A JOINT STUDY SPONSORED BY LIMRA INTERNATIONAL AND THE SOCIETY OF ACTUARIES

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007108-0306-30-B94 Printed in U.S.A.

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# EXECUTIVE SUMMARY

- For all individual life insurance products combined, lapse rates have increased from levels observed in a previous LIMRA persistency study covering the mid-1990s experience period. With the exception of the early years, policy lapse rates for the current study observation period were higher across all durations. The overall lapse rate for the 2001-2002 observation period was 4.9% on a policy basis and 7.8% on a face amount basis.
- Individual life insurance products experienced higher rates of lapse than either individual disability income or individual long-term care insurance plans. And the difference is greatest for policies in durations 5 through 10. In response to the poor performance of financial markets during the observation period of the current study, many individual life carriers began to focus new product development work on products with strong guarantees, including term, guaranteed universal life, and even whole life. This resulted in replacement of both variable policies and older, less competitive guaranteed products with more competitive newer products.
- The overall lapse rate for whole life insurance plans was 3.9 on a policy basis and 5.8% on a face amount basis. Policy lapse rates have increased slightly from the mid-1990 levels for all policy years.
- Total lapse rates for term insurance for all policy years combined were 10.2% on a policy basis and 10.3% on a face amount basis. Experience has worsened slightly since the mid-1990s for policies in years 11 and later; however, rates of lapsation have declined for policies in years 1 through 10. Some of the increase in lapses in the later years is attributable to shock lapses on level premium term policies nearing the end of the level premium period.
- Shock lapse rates (rates of lapse for policies near the end of the guaranteed level premium period) for level-premium term plans included in the current study ranged from 30% to 50% and tended to vary with the length of the guaranteed premium period.
- The overall lapse rate for universal life (UL) products for all policy years combined was 5.3% on both a policy basis and on a face amount basis. With the exception of policies in year 1, UL lapse rates have increased from the levels seen in previous individual life persistency studies.
- The overall lapse rate for variable universal life (VUL) plans covered by the current study was 8.5% on a policy basis and 8.8% on a face amount basis. Lapse rates have increased significantly from levels observed during the mid-1990s. This is likely the result of the poor equity market performance and continual volatility of returns over the observation period of the current study. Many policyholders became disillusioned with variable products after seeing their cash values shrink significantly. And, in the case of variable universal life plans, in many instances additional unplanned premium payments were required to keep policies in force.

- Premium persistency was also examined as part of this study. Premium payment ratios are calculated as the ratio of actual premium paid (up to the planned or billed amount) to the planned premium amount on policies that survive the observation period. Premium payment ratios have increased slightly for policies in the first three years, but have decreased for policies that are in duration 4 or later.
- Excess premiums are defined as any amounts paid into universal life or variable universal life policies greater than the planned premium for a given policy year. Excess premium ratios (the ratio of amounts above the planned premium level to the planned premium amount) have increased dramatically since the mid-1990s, especially for policies in their early years. Again, during the observation period of the current study, the industry saw a good deal of replacement of existing universal life and variable universal life policies with updated and more competitive product designs. This may also explain some of the increased excess premium in early durations.

# RECOMMENDATIONS

This report examines lapse experience on individual life products for a variety of policy and product factors. The study can be used for industry benchmarking, as well as for background information for the product development and planning process.

The data contained in this report can help companies identify factors that impact individual life insurance persistency. However, since the participants in the current study do not represent the entire industry and results for specific companies can vary, sometimes dramatically, these results should be used only as a supplement to the experience of the individual carrier. Companies should carefully consider underlying differences in distribution, product design, product development, and market strategy between their own organizations and current study participants.

To aid the reader in interpreting the information contained in this report, an Excel spreadsheet, which provides exposure information by lapse factor and data cell, is also available. The Excel file also contains face amount lapse data for all policy factors discussed in this report.

# METHODOLOGY

For purposes of this report, lapse includes termination for nonpayment of premium, insufficient cash value, full surrender of a policy, transfer to reduced paid-up or extended term status, and terminations for unknown reason. This is consistent with the definition of lapse applied for other LIMRA and Society of Actuaries experience studies and allows for comparison of results over time.

Participants were asked to provide information on their entire in-force blocks and, except in cases where a company's volume of business was so large or its experience so different from that of other participants that overall results would be unduly skewed, the lapse rates shown are based on 100% of policies submitted by the company.

It should be noted that not all participants in the study contributed data for their entire in-force block including all subsidiaries, product lines and policy years. In addition, several companies did not provide data for all policy and product factors requested. Therefore, care should be taken in interpreting results. The number of companies contributing to each lapse factor examined is indicated in the appropriate report section.

Due to the scarcity of data provided, lapse experience could not be examined by distribution channel for this or previous LIMRA persistency studies. We continue to work with participating companies to try to increase the level of detail included in study data submissions.

The observation period for the study is calendar years 2001 and 2002. The data for this report was collected on a policy level (seriatim) basis as this allows for a more detailed analysis of the factors influencing lapse results than studies conducted on an aggregated data basis.

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, expiry, maturity or conversion are not included in the amounts lapsing and contribute exposure for only the fraction of the year they were in force.

Industry lapse rates are calculated as a weighted average of the experience of all contributing companies, so companies with larger in-force blocks will affect the overall results more than companies with smaller in-force blocks.

# SAMPLE DESCRIPTION

Of the 22 companies participating in the study, 20 companies provided whole life data, 22 provided term data, 12 provided universal life data, and six submitted variable universal life data. Tables 1 and 2 below show the number of exposure records and the associated face amount in force for each product in the study sample. Some participants did not submit in force for all affiliated companies, all product lines and observation years.

Table 1
Study Sample — Number of Policies

| Issue year | Whole life (20 cos.) | Term life (22 cos.) | Universal life (12 cos.) | Variable universal life (6 cos.) | Total |
|---|---|---|---|---|---|
| 2001–2002 | 325,925 | 599,197 | 128,110 | 27,100 | 1,080,332 |
| 2000 | 604,479 | 738,210 | 115,910 | 26,041 | 1,484,640 |
| 1999 | 675,866 | 1,015,573 | 106,967 | 25,353 | 1,823,759 |
| 1998 | 678,666 | 892,267 | 93,594 | 32,916 | 1,697,443 |
| 1997 | 734,194 | 796,920 | 103,730 | 33,508 | 1,668,352 |
| 1994–1996 | 2,562,210 | 1,580,264 | 239,370 | 103,166 | 4,485,010 |
| 1989–1993 | 5,881,863 | 1,277,018 | 421,633 | 138,335 | 7,718,849 |
| Pre 1989 | 35,911,304 | 1,515,596 | 870,354 | 79,071 | 38,376,325 |
| **Total** | **47,374,507** | **8,415,045** | **2,079,668** | **465,490** | **58,334,710** |

Table 2
Study Sample — Face Amount

In Millions

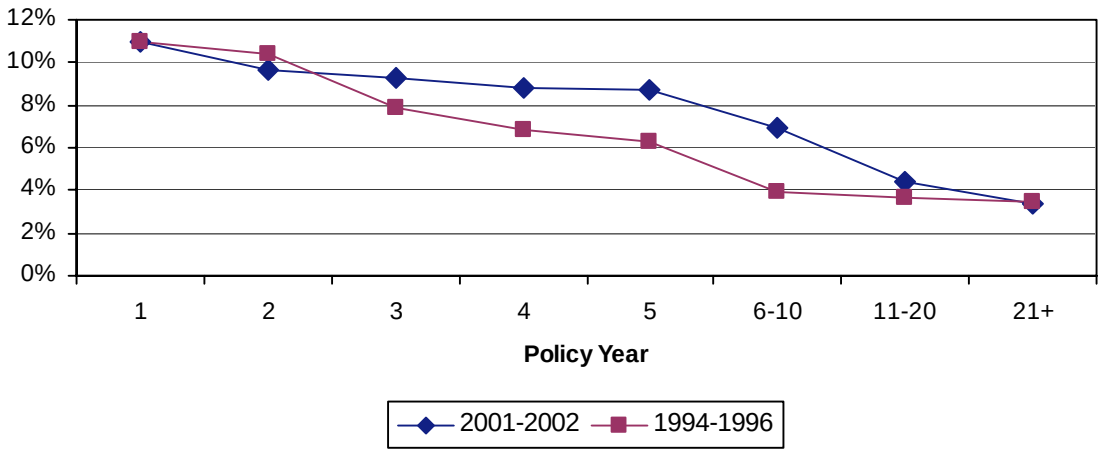
| Issue year | Whole life (20 cos.) | Term Life (22 cos.) | Universal life (12 cos.) | Variable universal life (6 cos.) | Total |
|---|---|---|---|---|---|
| 2001–2002 | 31,640 | 207,102 | 42,052 | 12,226 | 293,020 |
| 2000 | 48,411 | 236,043 | 39,026 | 12,834 | 336,314 |
| 1999 | 54,585 | 224,375 | 35,325 | 9,302 | 323,587 |
| 1998 | 56,585 | 193,291 | 30,480 | 9,235 | 289,591 |
| 1997 | 64,890 | 162,262 | 25,644 | 8,237 | 261,033 |
| 1994–1996 | 208,075 | 314,462 | 46,989 | 18,918 | 588,444 |
| 1989–1993 | 442,773 | 235,133 | 56,466 | 18,945 | 753,317 |
| Pre 1989 | 535,140 | 109,299 | 90,925 | 8,354 | 743,718 |
| **Total** | **1,442,099** | **1,681,967** | **366,907** | **98,051** | **3,589,024** |

# OVERALL RESULTS

This report presents the results of a study of individual life insurance lapse experience in the United States conducted jointly by LIMRA International and the Society of Actuaries. The study is based on data provided by 22 individual life insurance companies and it presents lapse experience for whole life, term life, universal life, and variable universal life plans traced through 2002. Premium persistency under flexible premium payment products (universal life and variable universal life) is also examined.

For all individual life insurance products combined, lapses have increased from mid-1990 levels. This is consistent with industry-based policy lapse ratios calculated using annual statement data for years 1995-1996 and 2001-2002. With the exception of the first two years, policy lapse rates for the current study observation period were higher at all durations (Figure 1).

Figure 1
Individual Life Policy Lapse Rates

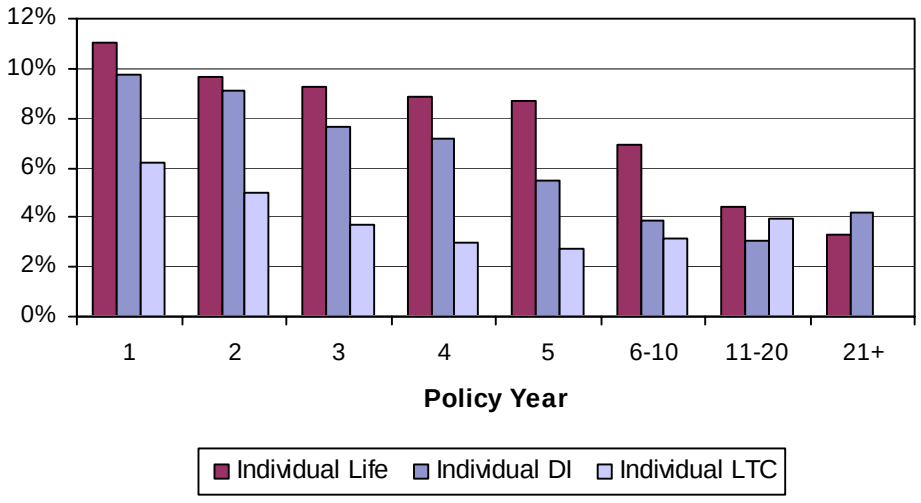



On a face amount basis, lapse rates emerged in a more level pattern by policy year with lower lapse rates on a face amount basis for policies in the early years and higher lapse rates on a face amount basis for policies in the later years (Figure 2).

Figure 2
Individual Life Face Amount Lapse Rates


Individual life insurance products also experienced higher lapse rates than did either individual disability income or individual long-term care insurance plans (Figure 3). During the observation period of the current study, the financial markets were in significant turmoil as poor performance of equity investments combined with all-time low interest rates. In response, many individual life carriers began to focus new product development work on products with strong guarantees including term, guaranteed universal life, and even whole life. This resulted in replacement of both variable policies and older, less competitive guaranteed products with the newer more competitive options.

Figure 3
Individual Life versus Individual Disability and Long-Term Care Insurance
Lapse Experience



# WHOLE LIFE INSURANCE

This section of the report focuses on traditional whole life plans. However, the results include a small number of graded premium life, interest-sensitive whole life, and modified life policies, as well.

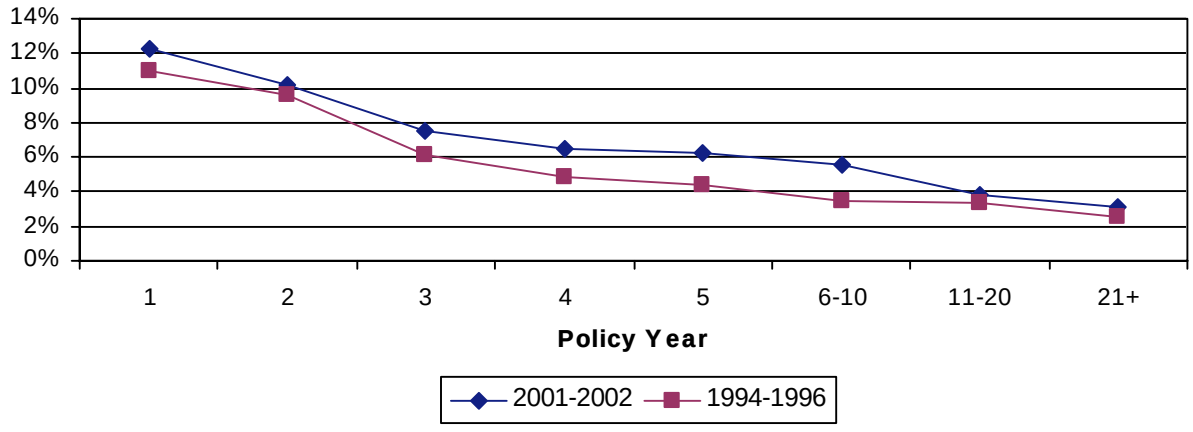
Table 3 shows policy activity during the observation period for whole life plans.

Table 3
Whole Life Coverage Activity Reported During the Observation Period
Percentage of Policy Records Submitted

| Coverage activity | Percent of Policies |
|---|---|
| Lapse for full surrender or nonpayment of premium | 3.3% |
| Death | 1.2 |
| Converted to another plan of insurance | 0.4 |
| Expiry/maturity | 1.0 |
| Remaining in force | 94.1 |
| **Total** | **100.0%** |

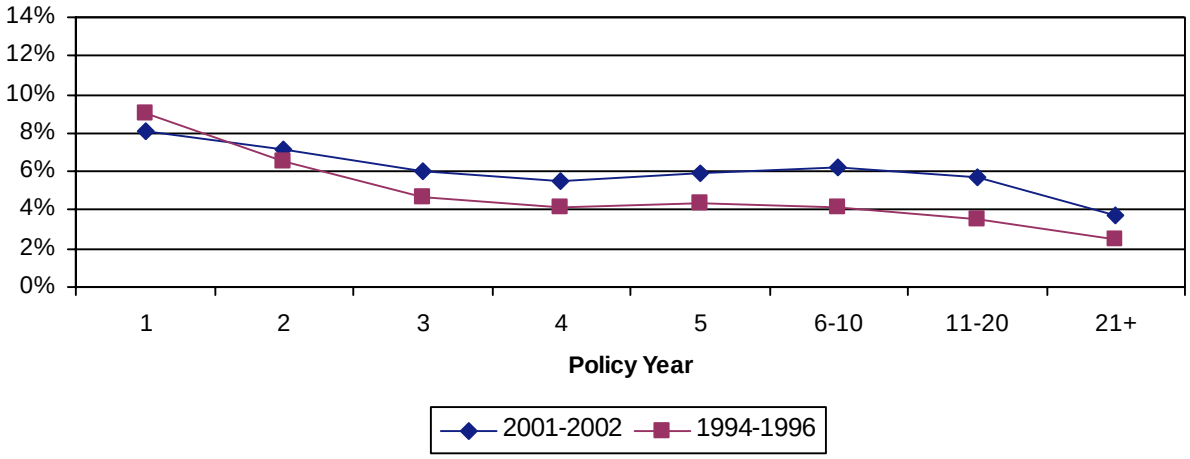
The overall lapse rate for whole life insurance plans for all product designs and policy years combined was 3.9% on a policy basis and 5.8% on a face amount basis. Figure 4 below shows policy lapse rates by year for whole life plans from the 1994-1996 and 2001-2002 experience periods. Note that lapse rates have increased slightly across all policy years. Some of this may be due to the introduction of stronger no-lapse guarantees on some universal life plans. These newer universal life products have become a source of competition for traditional whole life plans and may have led to some replacement activity.

Figure 4
Whole Life Policy Lapse Rates



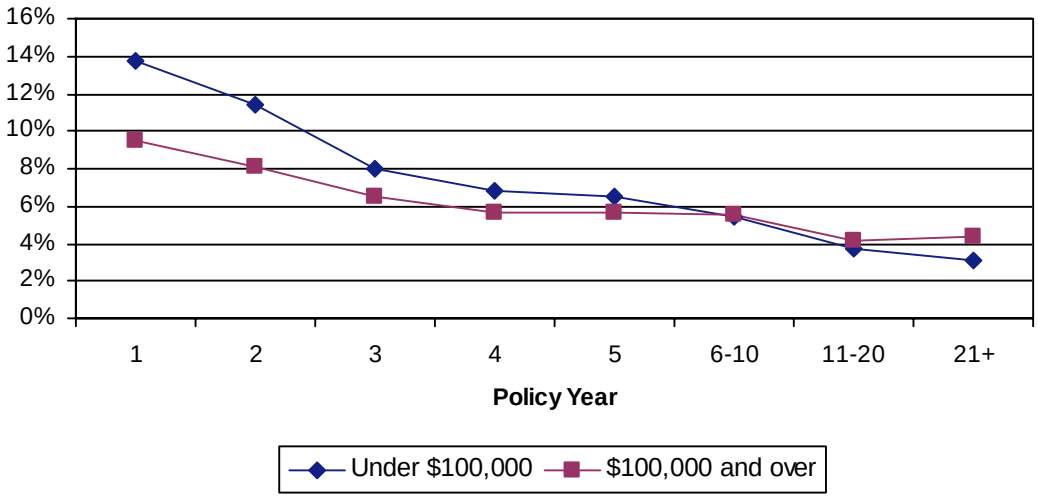
On a face amount basis, whole life lapse rates tend to emerge in a more level pattern by policy year. And, with the exception of the first year, face amount lapse rates have also increased at all durations since the mid-1990s (Figure 5).

Figure 5
Whole Life Face Amount Lapse Rates




And, as in past studies, during the first five years, smaller whole life policies were more likely to lapse than larger policies (Figure 6).

Figure 6
Whole Life Lapse Rates by Policy Size

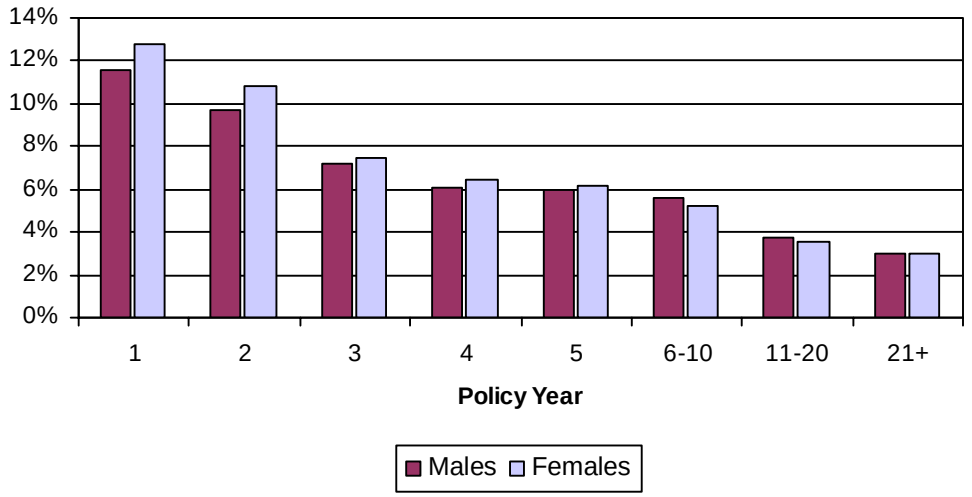



The remainder of the whole life section of this report looks at those policy and product features most likely to affect lapse experience for whole life plans. These factors include gender, issue age, attained age, premium payment mode, risk class, smoking status, and underwriting method.

## GENDER

The whole life sample population is 60% male, 40% female on a policy basis and 75% male, 25% female on a face amount basis. The average face amount for males is $40,000, while the average for females is $26,000. Total policy lapse rates for females were slightly higher than for males with differences seen in the early policy years (Figure 7).

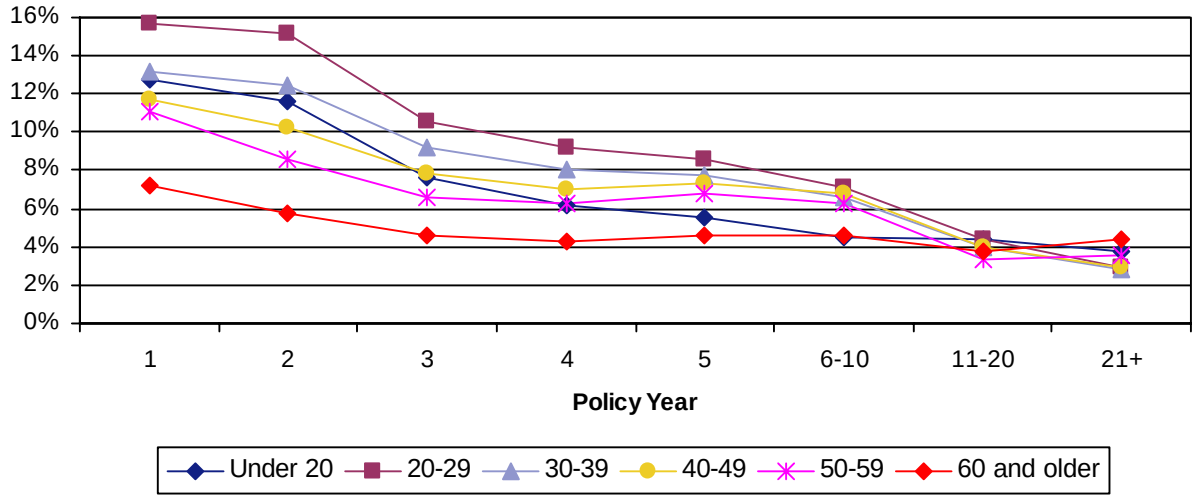
Figure 7
Whole Life Policy Lapse Rates by Gender
Includes 19 Companies




## ISSUE AGE

Lapse experience generally improves with increasing age at issue (Figure 8). The exception to this is policies issued on individuals under the age of 20 whose lapse rates are closer to those of the age 30-39 and 40-49 issue age groups. This may be because premiums for these policies are paid by older adult family members rather than the insureds themselves. So, the pattern of lapse may be more closely tied to the age of the adult premium-payers.

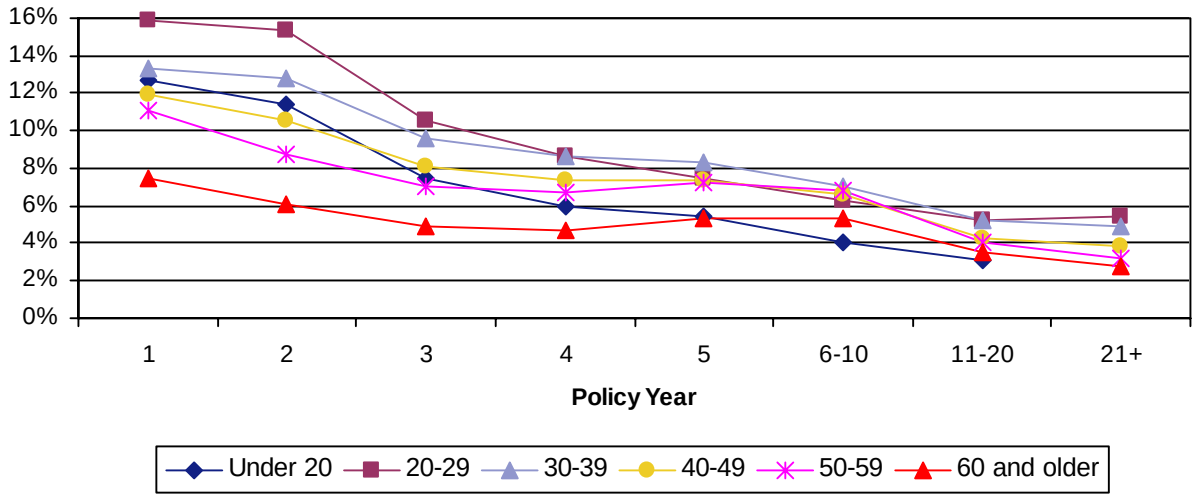
Figure 8
Whole Life Policy Lapse Rates by Issue Age Group
Includes 18 Companies




## ATTAINED AGE

Figure 9 shows policy lapse rates for various attained ages. Following a pattern very similar to the data by issue age group, lapses decrease with increasing attained age. Again, the exception to this is the case of policyholders under the age of 20.

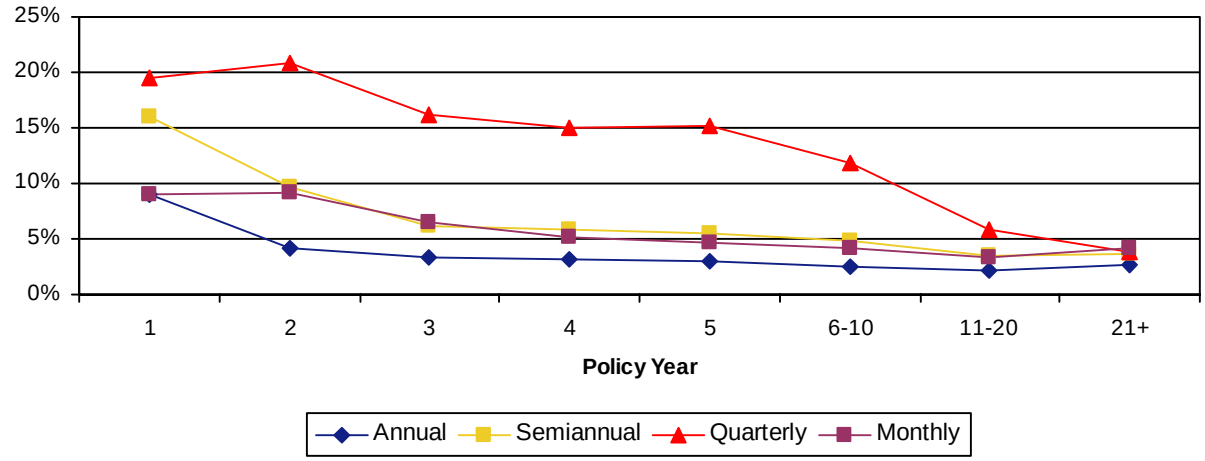
Figure 9
Whole Life Policy Lapse Rates by Attained Age Group
Includes 17 Companies



## PREMIUM PAYMENT MODE

As seen in previous studies of whole life persistency experience, lapse rates generally increase with the number of premium payments made each year (Figure 10). Note that the exception to this rule is policies paid on a monthly basis. This category includes policies billed on a direct basis, as well as those paid through electronic fund transfer methods where the automatic nature of the transaction tends to lead to improved policy persistency.

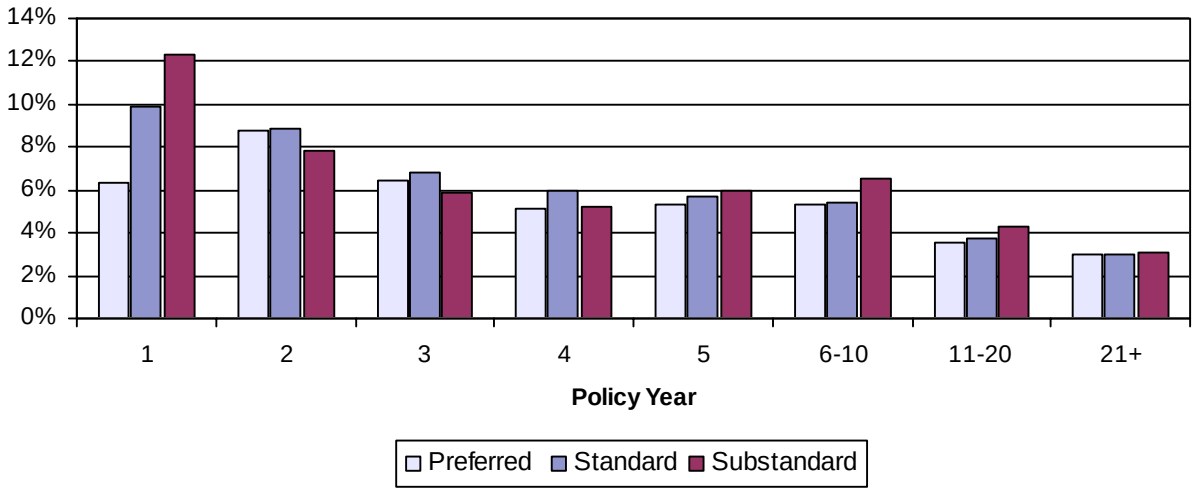
Figure 10
Whole Life Policy Lapse Rates by Premium Payment Mode
Includes 13 Companies




## RISK CLASS

With the exception of the first policy year, where "buyer's remorse" has the greatest impact on lapsation, experience doesn't vary significantly by risk class (Figure 11). The preferred classes tended to have slightly better persistency than either the standard or substandard classes, especially in the first policy year. At the latest policy durations, lapse levels are similar across the various risk groups.

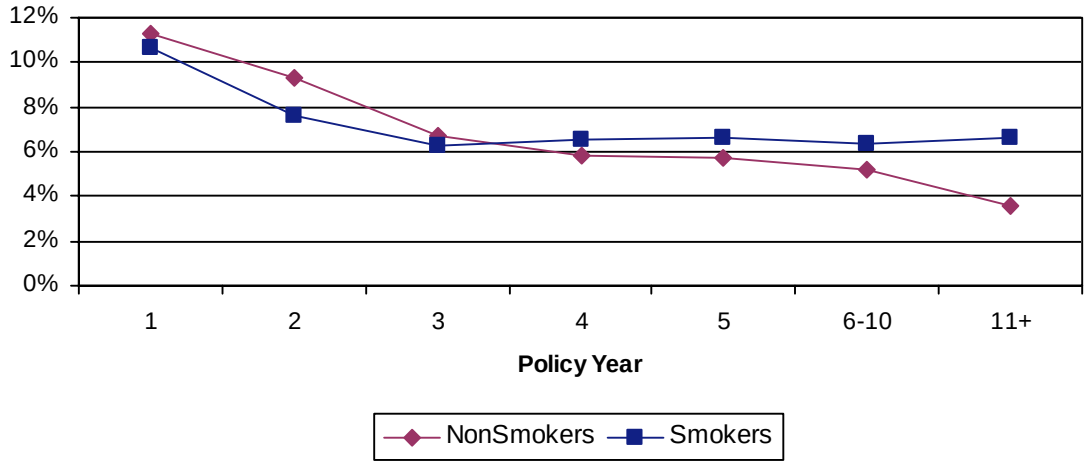
Figure 11
Whole Life Policy Lapse Rates by Risk Class
Includes 13 Companies




## SMOKING STATUS

Smokers and nonsmokers also exhibited similar rates of lapsation by policy year with nonsmokers lapsing slightly more often than smokers in the early years and the opposite trend in later years (Figure 12).

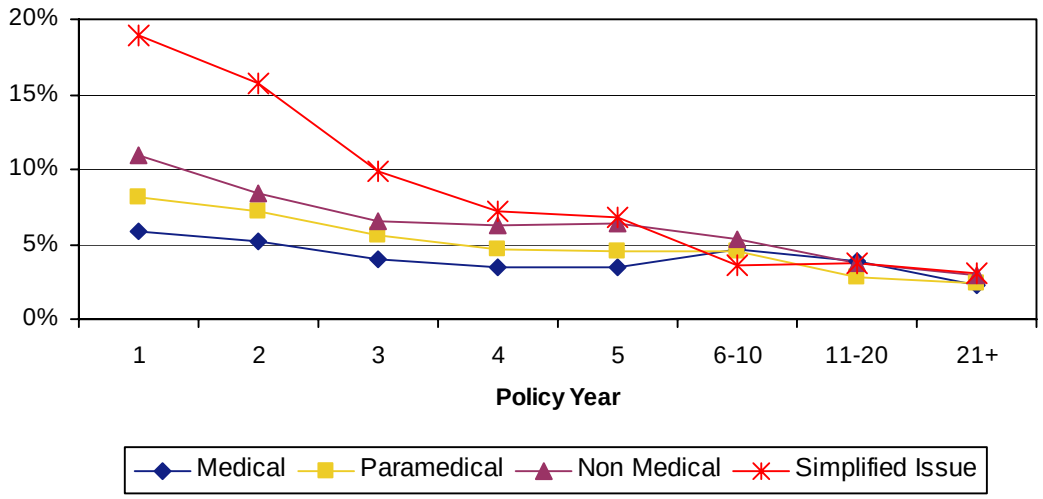
Figure 12
Whole Life Policy Lapse Rates by Smoking Status
Includes 17 Companies



## UNDERWRITING METHOD

Looking at results by the underwriting method used, policies issued with full medical underwriting or on a paramedical basis exhibited the lowest rates of lapsation. Whole life policies issued on a nonmedical basis (using a traditional nonmedical questionnaire with a complete set of medical history questions) or on a simplified issue basis (with less than a full nonmedical screening) experienced higher lapse rates for the first five policy years (Figure 13).

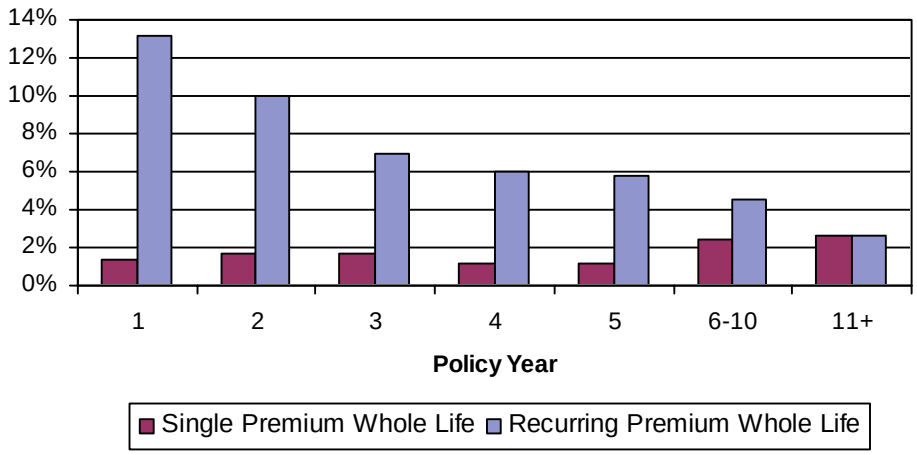
Figure 13
Whole Life Policy Lapse Rates by Underwriting Method
Includes 14 Companies



## SINGLE PREMIUM WHOLE LIFE

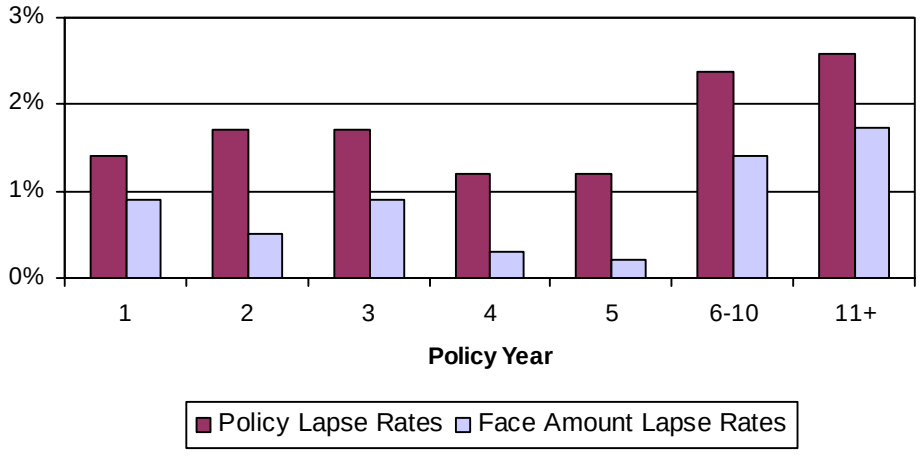
Six companies provided data on single premium whole life insurance plans. For these companies, single premium products experienced significantly lower rates of lapse than recurring premium products (Figure 14).

Figure 14
Single Premium Whole Life Policy Lapse Rates




And, single premium lapses are even lower on a face amount basis than on a policy count basis (Figure 15).

Figure 15
Single Premium Whole Life Face Amount Lapse Rates



Overall lapse rates for single premium whole life plans were similar for males and females. However, there was some variance in the results by duration on both a policy count and a face amount basis (Figures 16 and 17).

Figure 16
Single Premium Whole Life Policy Lapse Rates by Gender

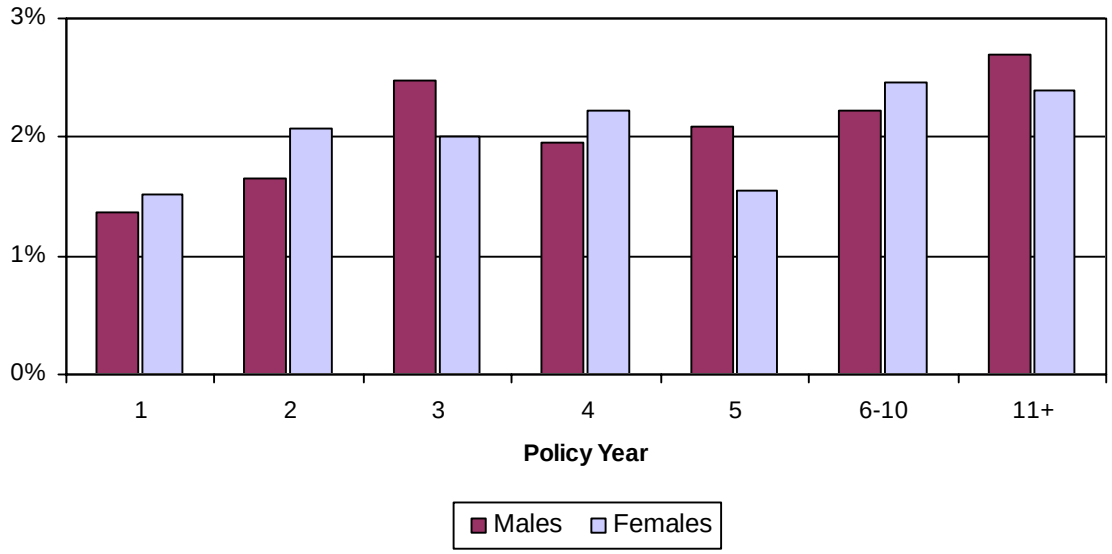
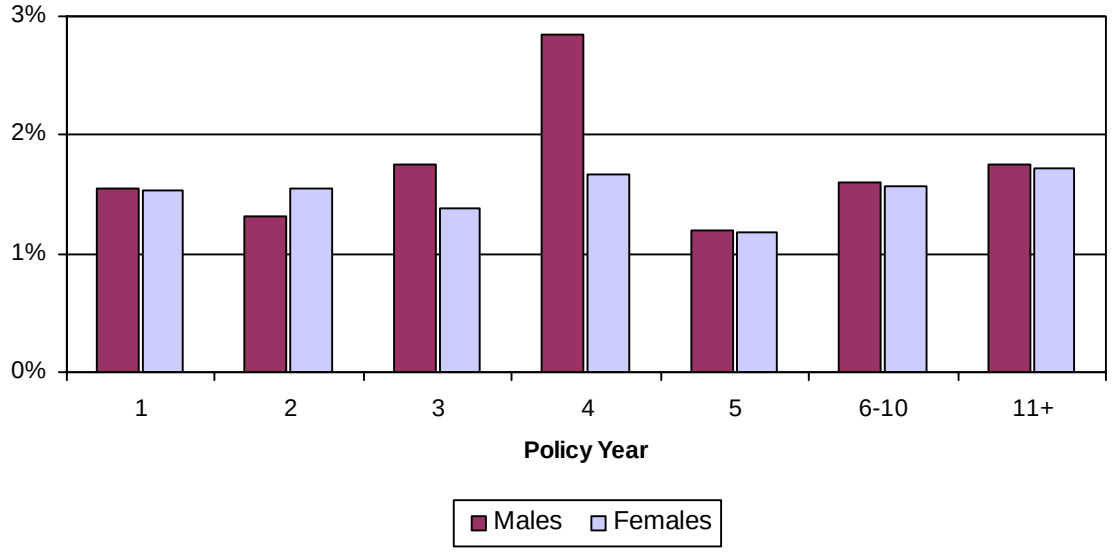



Figure 17
Single Premium Whole Life Face Amount Lapse Rates by Gender



# TERM LIFE INSURANCE

This portion of the report contains experience for annually renewable term and level-premium term plans combined. The exposure for early policy years is predominantly level-premium term, while the exposure for policy years 15 and later consists of mostly annually renewable term policies.

Some participating company term data submissions included level term insurance that had reached the end of the level premium period during the experience period of the study. Wherever possible, these blocks were identified and policies that were near the end of the level-premium term period were excluded for purposes of examining total term lapse rates. However, these policies were later reviewed in an attempt to estimate end-of-guarantee period shock lapse rates for level-premium term products.

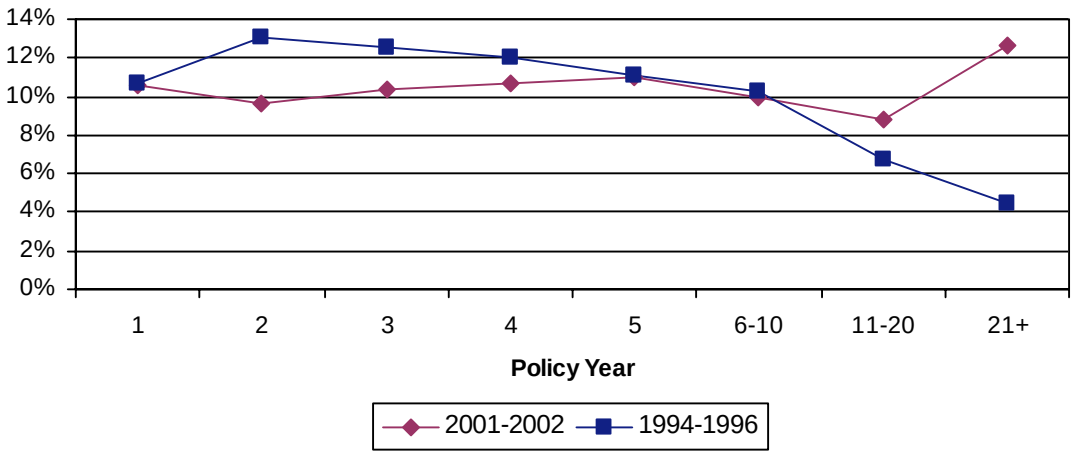
Table 4 shows policy activity during the observation period for term insurance policies.

Table 4
Term Life Coverage Activity Reported During the Observation Period
Percentage of Policy Records Submitted

| Termination activity | Percent of Policies |
|---|---|
| Lapse for nonpayment of premium | 9.5% |
| Death | 0.2 |
| Converted to another plan of insurance | 0.9 |
| Expiry/maturity | 0.1 |
| Remaining in force | 89.3 |
| **Total** | **100.0%** |

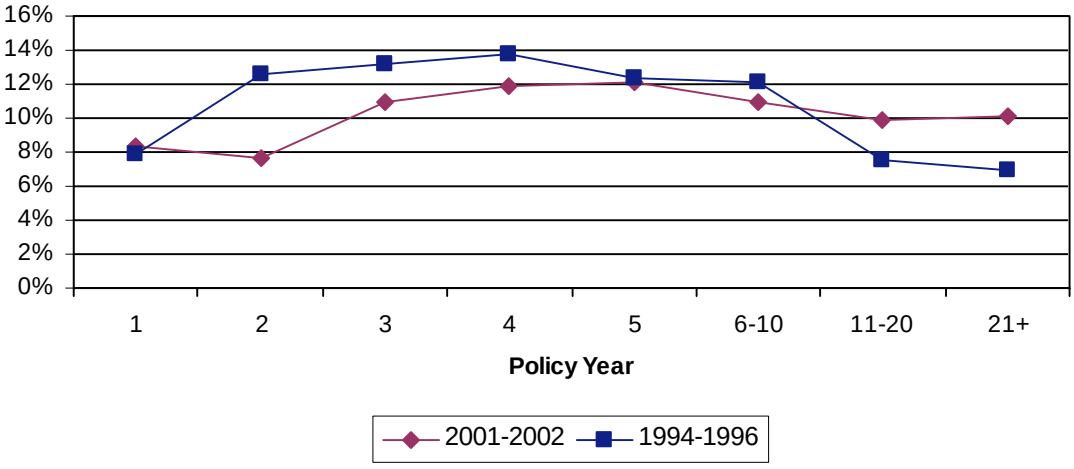
Total lapse rates for term insurance products for all policy years combined was 10.2% on a policy basis and 10.3% on a face amount basis. Figure 18 below shows policy lapse rates by year for term life plans from the 1994-1996 and 2001-2002 experience periods. Experience has worsened slightly for policies in years 11 and later; however, term rates of lapsation have decreased for policies in years 1 through 10. The increase in term lapse rates seen in durations 11 and later is due at least in part to shock lapses on level-premium term business as not all participating companies were able to separately identify this business.

Figure 18
Term Life Policy Lapse Rates




The trend in experience is similar on a face amount basis, but lapse rates are lower in the first few policy years (Figure 19).

Figure 19
Term Life Face Amount Lapse Rates

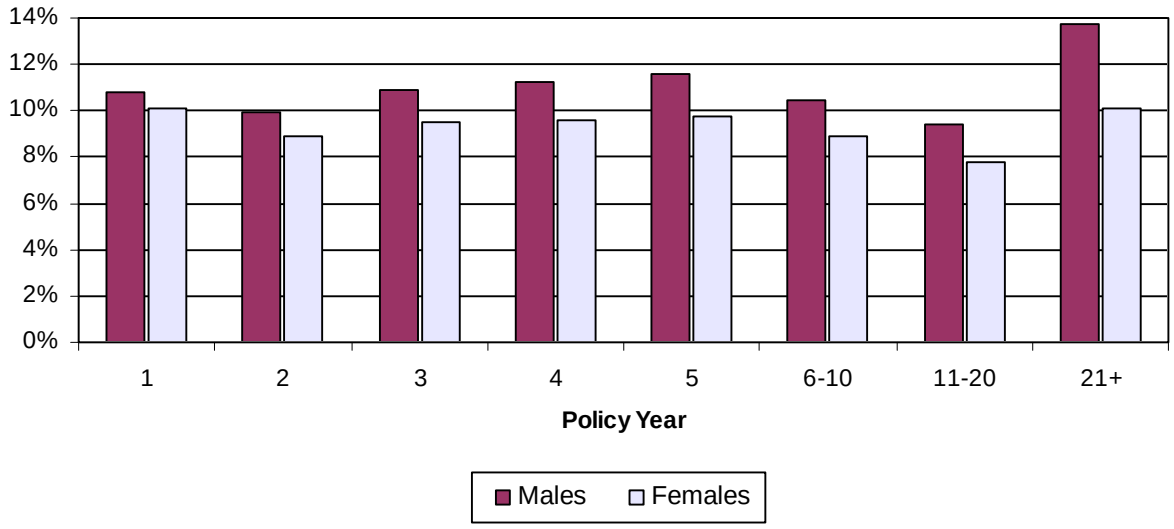



As with the whole life products, the remainder of the term insurance section of the report looks at those policy and product features most likely to affect lapse experience for term life plans. These factors include gender, issue age, attained age, premium payment mode, risk class, smoking status, and underwriting method.

## GENDER

The term sample is 40% female, 60% male by policy count and 25% female, 75% male by face amount. The average face amount for females was $140,000 and the average face amount for males was $240,000. For term insurance plans, females exhibited better persistency than males did across all policy years (Figure 20).

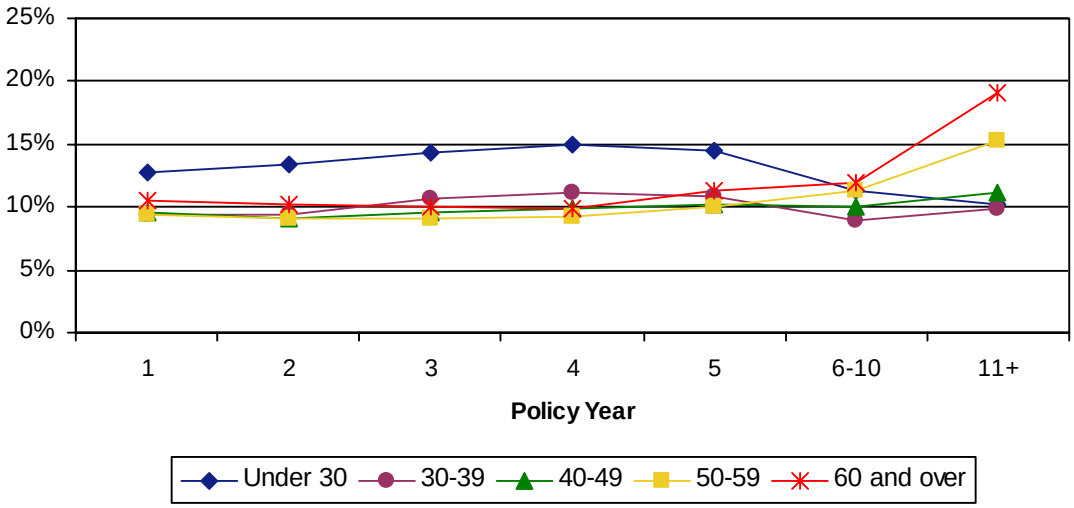
Figure 20
Term Life Policy Lapse Rates by Gender
Includes 22 Companies




## ISSUE AGE

Term insurance policy lapse rates do not vary as much by issue age group as permanent policies do (Figure 21). Total lapse rates are highest at the youngest and oldest ages, including individuals under 30 and over 60 years of age at issue. Young and healthy policyholders were likely replacing their existing policies at more competitive rates, while older policyholders may have been lapsing due to less perceived need for life insurance protection combined with the fact that rates can become prohibitively expensive at the higher ages. Lapse experience was very similar for issue ages between 30 and 60, with approximately 10% of policies lapsing each year for the first 10 to 20 years.

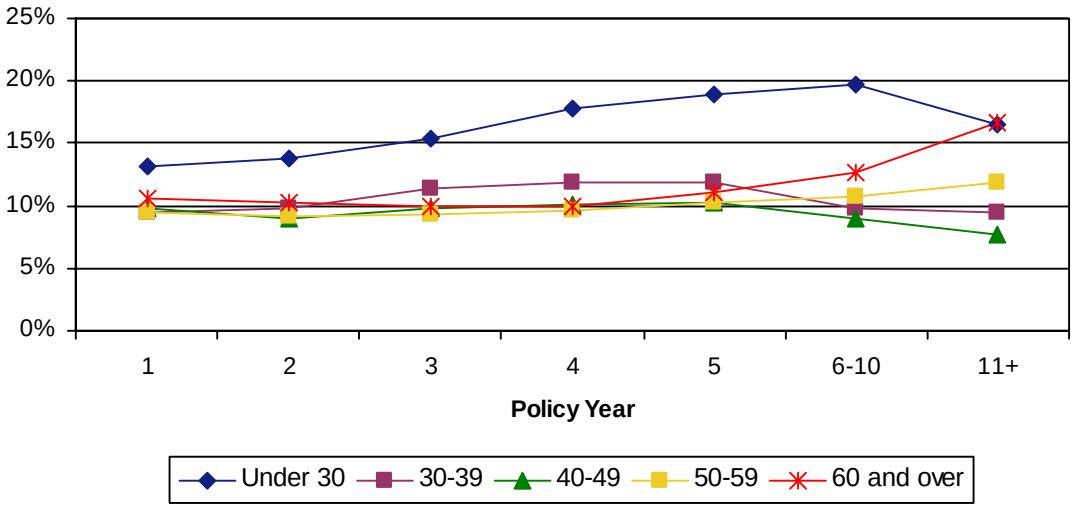
Figure 21
Term Life Policy Lapse Rates by Issue Age Group
Includes 21 Companies




## ATTAINED AGE

Figure 22 shows policy lapse rates for various attained ages and indicates that in a pattern very similar to the experience by issue age, lapses are relatively level at around 10% until years 11 and later. Again, the exception to this is individuals under the age of 30 who exhibited poorer persistency.

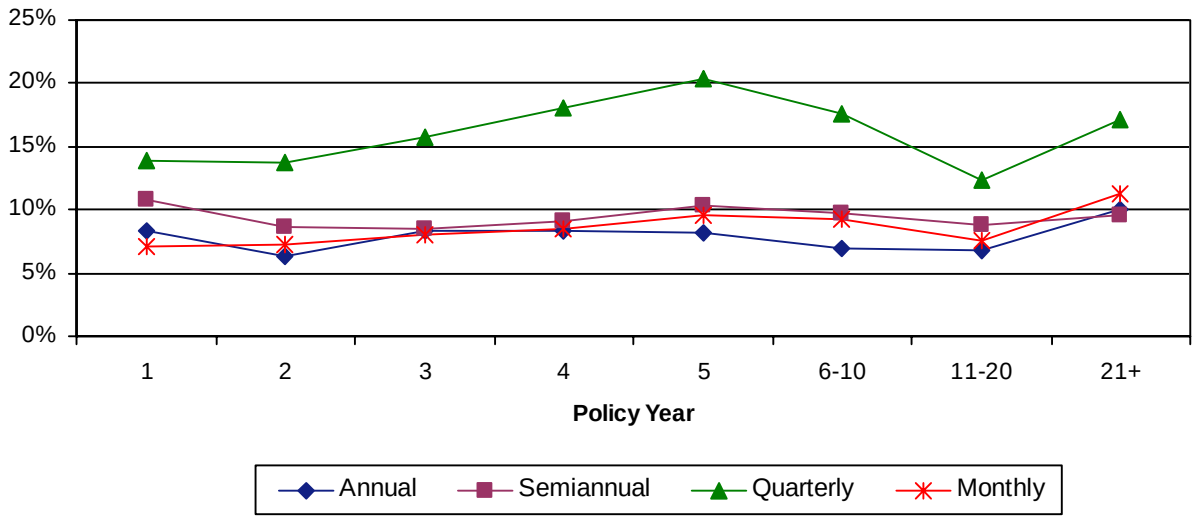
Figure 22
Term Life Policy Lapse Rates by Attained Age Group
Includes 19 Companies



## PREMIUM PAYMENT MODE

In a pattern similar to other individual life insurance products, lapse rates for term insurance generally increase with the number of premium payments made each year (Figure 23). Again, as with whole life insurance plans, the exception is policies paid on a monthly basis. This category includes both policies billed on a direct basis and those paid through electronic fund transfer methods where the automatic nature of the transaction can lead to improved policy persistency.

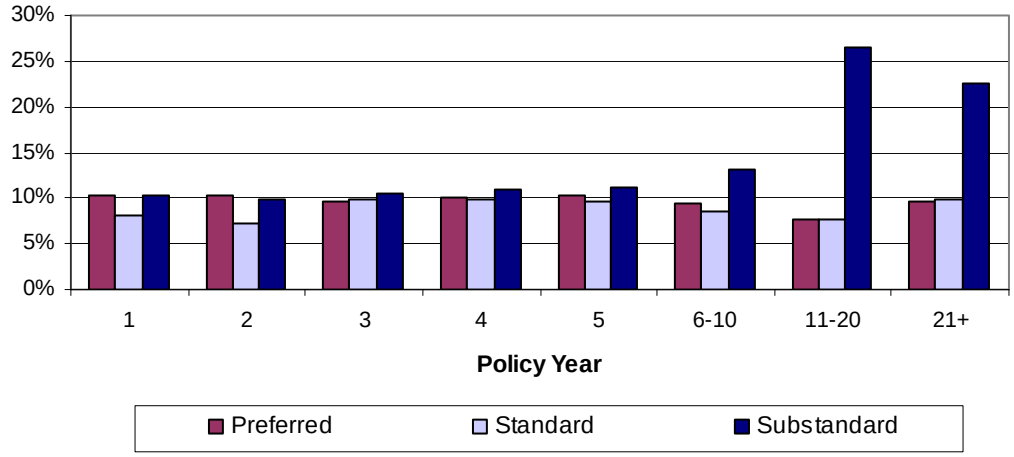
Figure 23
Term Life Policy Lapse Rates by Premium Payment Mode
Includes 18 Companies




## RISK CLASS

Term insurance policies that were classified as substandard risks at issue had higher rates of lapsation than policies issued as standard or preferred risks for most policy years (Figure 24). In the later policy years, lapse rates for substandard policies are significantly greater. This may be a data anomaly as the sample size for durations 11 and later is relatively small, representing only 13% of the total exposure for substandard cases.

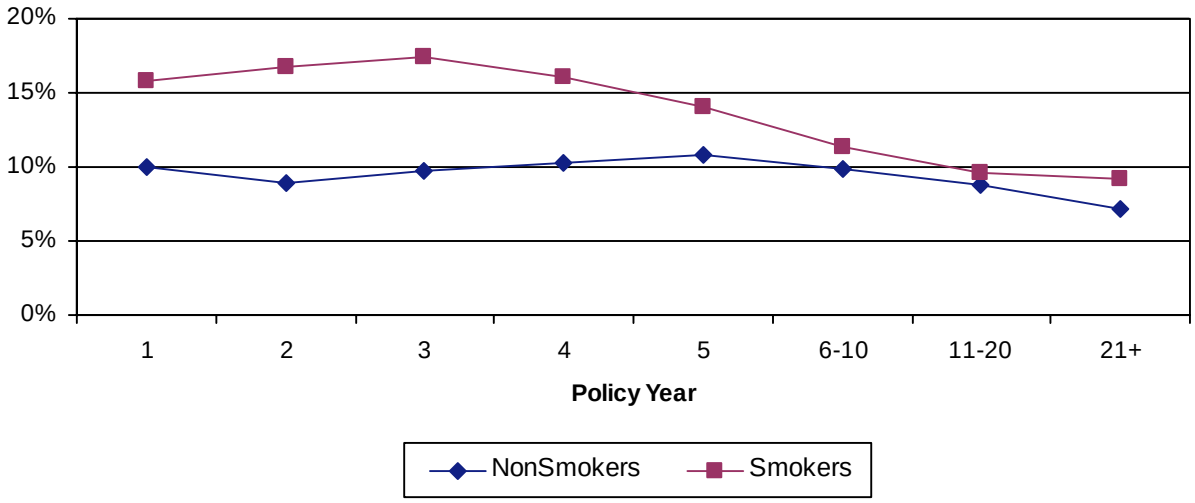
Figure 24
Term Life Policy Lapse Rates by Risk Classification
Includes 18 Companies




## SMOKING STATUS

Smokers lapsed more often than nonsmokers at all policy durations (Figure 25). For term insurance buyers, price is often the key consideration in the purchase and retention of a policy. It is possible that smokers either found their policies too expensive to maintain or they may have found more competitive smoker rates through new product offerings.

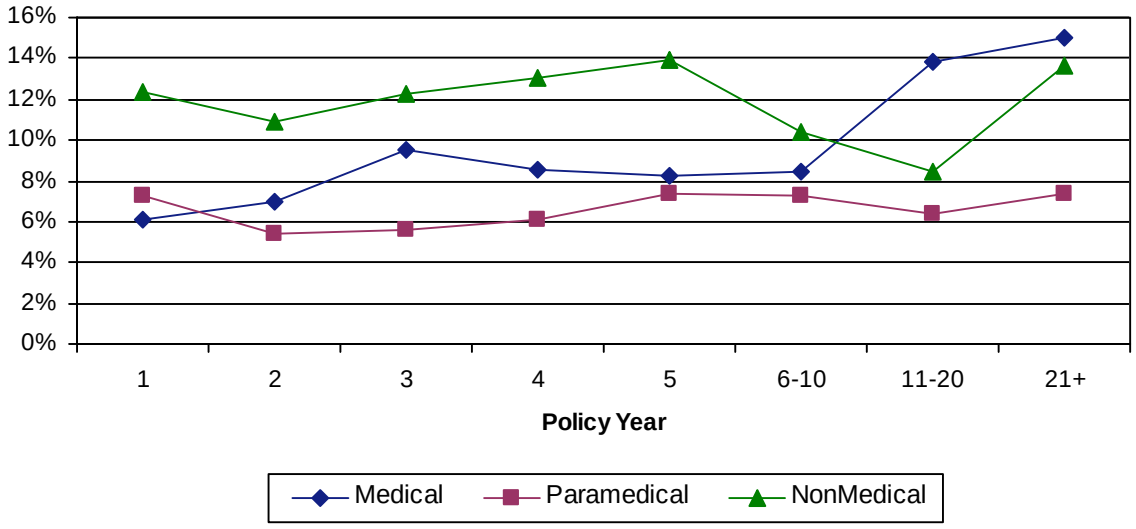
Figure 25
Term Life Policy Lapse Rates by Smoking Status
Includes 21 Companies



## UNDERWRITING METHOD

Looking at results by the underwriting method used, like whole life insurance, term policies with more rigorous underwriting requirements tended to have better persistency than those issued on a nonmedical basis (using a traditional nonmedical questionnaire with a complete set of medical history questions) (Figure 26). Again, this is likely the result of greater focus by term insurance buyers on price. Generally, a more thorough underwriting process allows the life insurance carrier to offer its healthy customers the lowest prices.

Figure 26
Term Life Policy Lapse Rates by Underwriting Method
Includes 12 Companies



# UNIVERSAL LIFE INSURANCE

This section examines lapse experience for universal life policies issued during 2002 and earlier. As a result, the underlying data consists mostly of traditional current assumption universal life product designs. However, a portion of the policies in the first three policy years during the study observation period were issued with the strong no-lapse guarantees that have become popular in the universal life marketplace over the past several years.

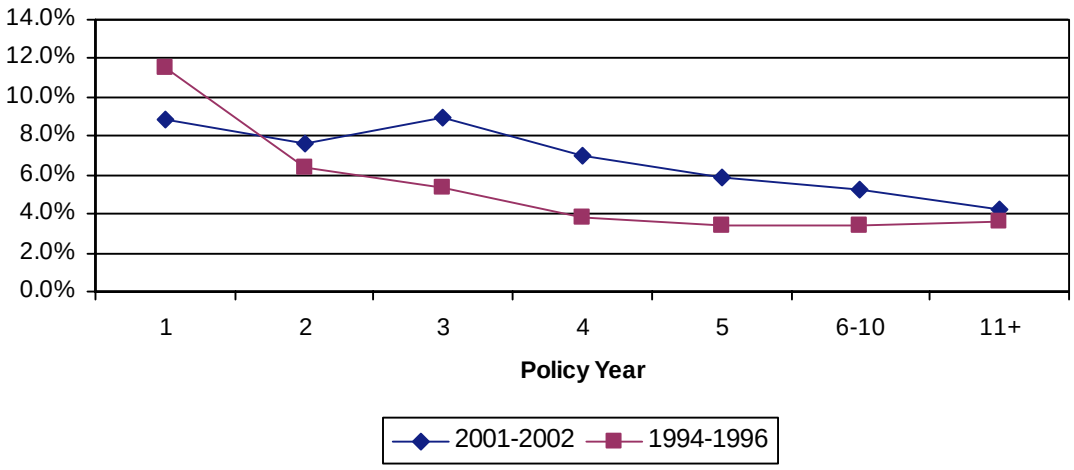
Table 5 shows policy activity during the observation period for universal life plans.

Table 5
Universal Life Coverage Activity Reported During the Observation Period
Percentage of Policy Records Submitted

| Termination activity | Percent of Policies |
|---|---|
| Lapse for full surrender or insufficient cash value | 5.1% |
| Death | 0.7 |
| Converted to another plan of insurance | 0.0 |
| Expiry/maturity | 0.0 |
| Remaining in force | 94.2 |
| **Total** | **100.0%** |

The overall lapse rate for universal life products for all policy years combined was 5.3% on both a policy basis and on a face amount basis. Figure 27 below shows policy lapse rates by year for universal life plans from the 1994-1996 and 2001-2002 experience periods. With the exception of year 1, policy lapse rates have increased from the levels seen in the mid-1990s. This is likely related both to the increased level of new product development in the universal life market, as well as the continued low interest environment and its impact on universal life policy cash values.

Figure 27
Universal Life Policy Lapse Rates




For policies in years 1 through 10, lapse rates are lower on a face amount basis than on a policy basis, indicating that smaller policies tended to lapse more often than larger policies (Figures 28 and 29). However, for policies in years 11 and later, the trend reverses.

Figure 28
Universal Life Face Amount Lapse Rates

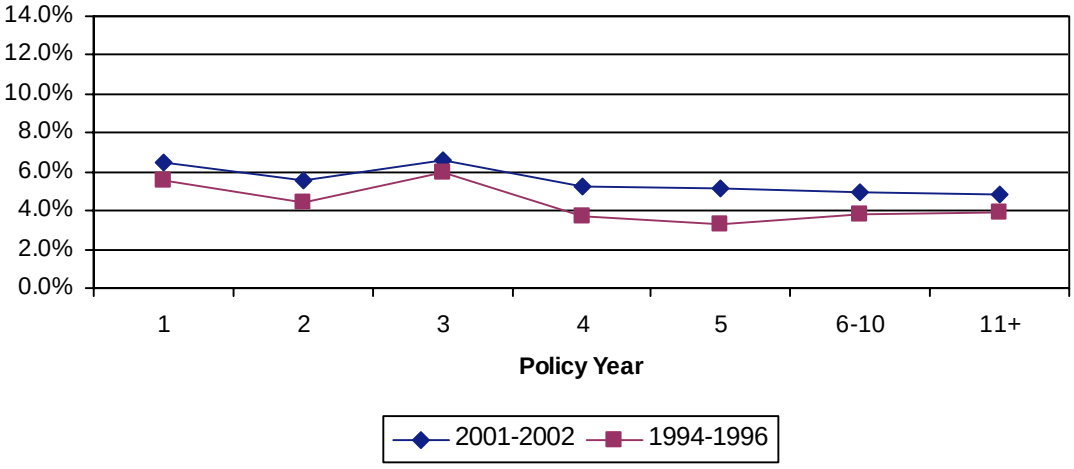
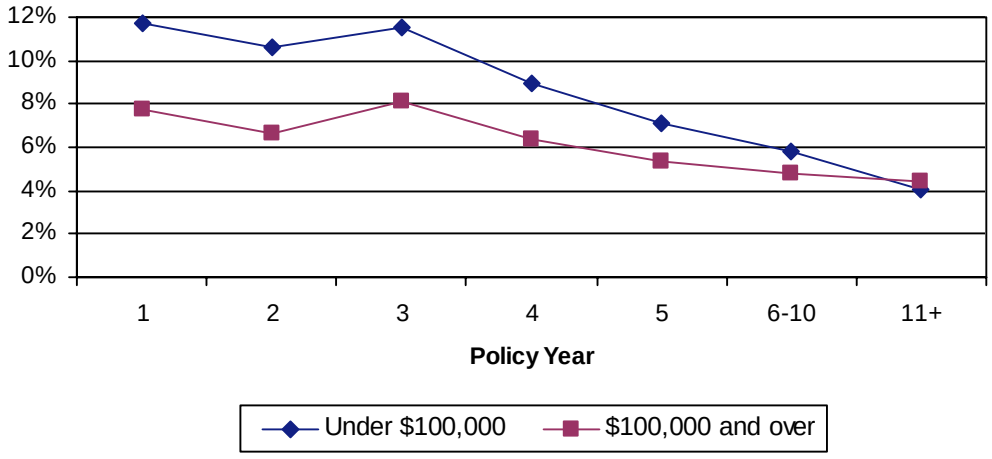


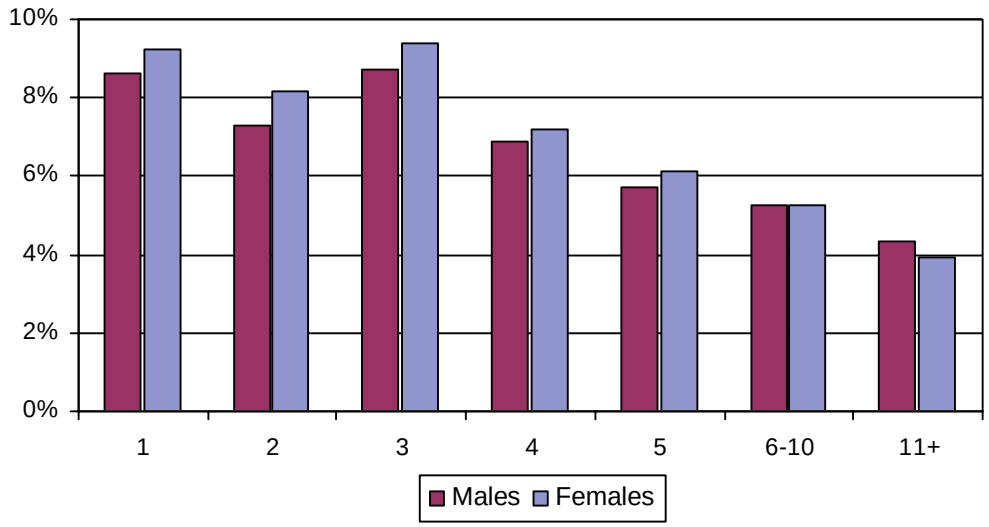
Figure 29
Universal Life Lapse Rates by Policy Size




## GENDER

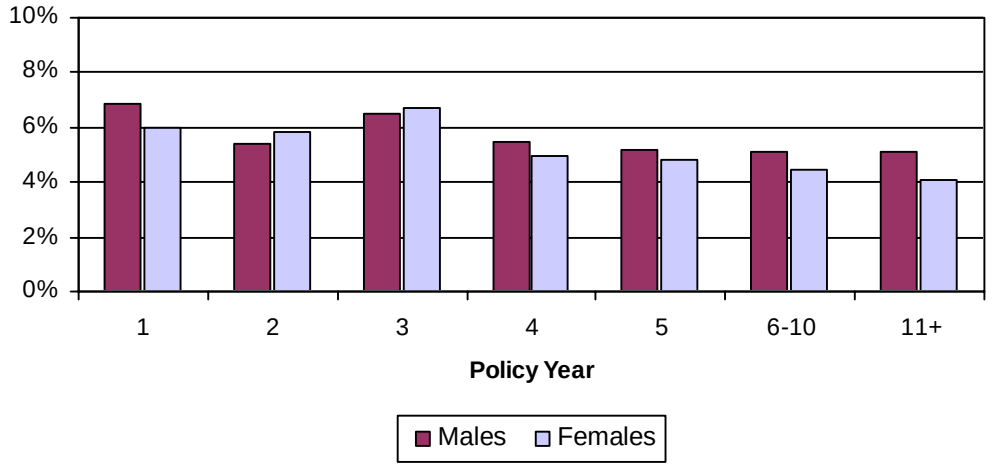
Universal life policies in the current sample are distributed 65% male and 35% female by policy count and 70% male and 30% female by face amount. The average face amount for males is $185,000, while the average for females is $155,000. On a policy basis, rates of lapsation for female universal life policyholders are generally higher than those of males during the first 10 policy years (Figure 30).

Figure 30
Universal Life Policy Lapse Rates by Gender
Includes 12 Companies



However, on a face amount basis, with female policyholder's smaller average size, women generally had lower lapse rates than their male counterparts (Figure 31).

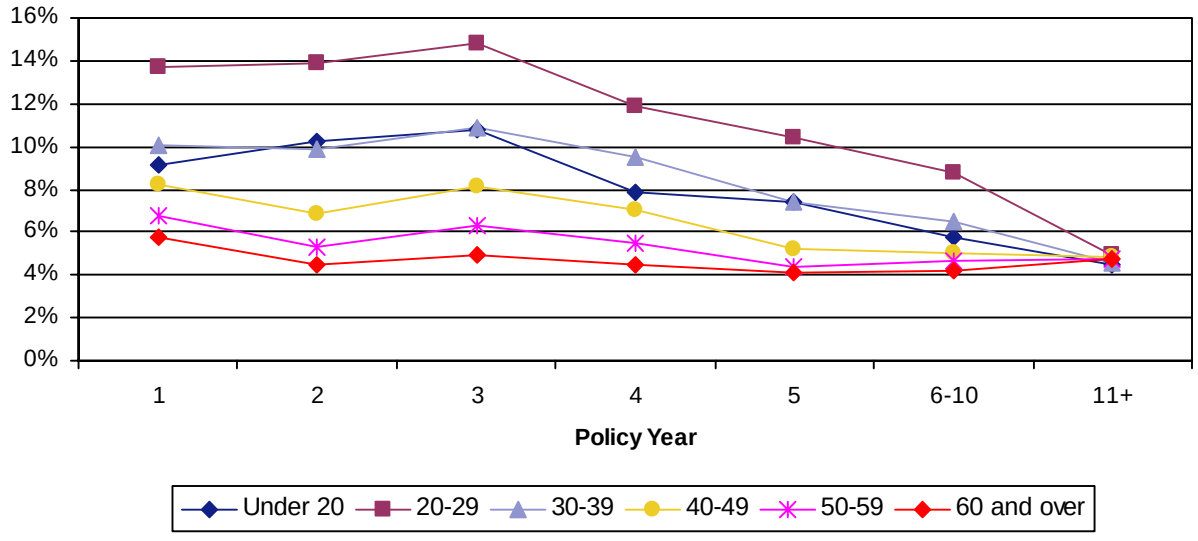
Figure 31
Universal Life Face Amount Lapse Rates by Gender
Includes 12 Companies




## ISSUE AGE

For universal life insurance products covered by the current study, lapse rates generally decrease with increasing issue age across all policy years. In a pattern similar to other individual life insurance products, the exception to this is the case where the policyholder is under age 20 at issue (Figure 32).

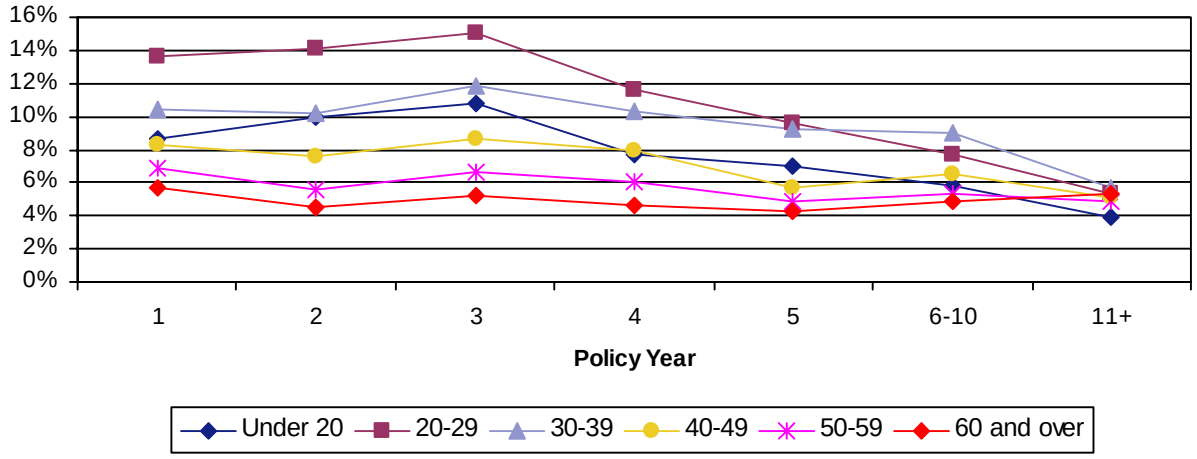
Figure 32
Universal Life Policy Lapse Rates by Issue Age Group
Includes 12 Companies



## ATTAINED AGE

As with other individual life insurance products, lapse experience is very similar on an issue age and an attained age basis (Figure 33). In general, older policyholders have significantly higher persistency than younger policyholders, regardless of when the policy was issued.

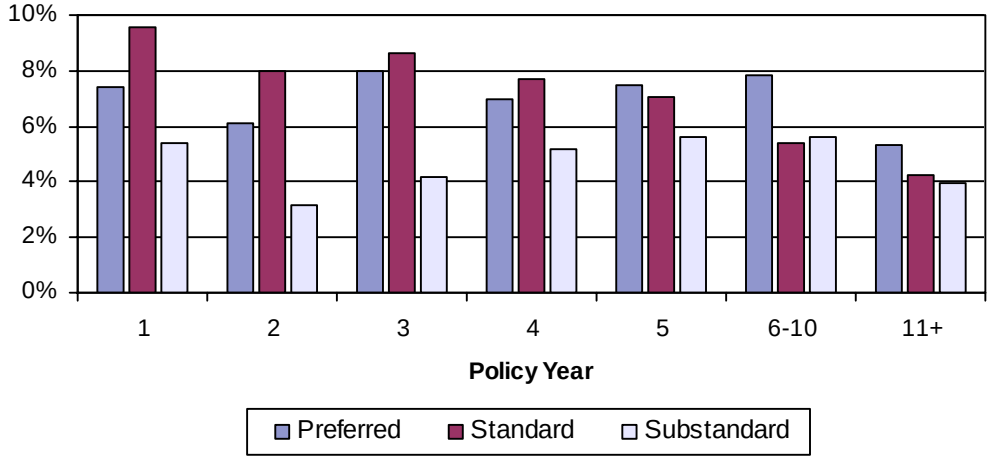
Figure 33
Universal Life Policy Lapse Rates by Attained Age Group
Includes 12 Companies




## RISK CLASS

For recently issued cases (in policy years 4 and earlier during the observation period of the study), those issued on a preferred basis exhibited lower rates of lapsation than those issued on a standard basis (Figure 34). The trend then reverses itself for policies in years 5 and later. Universal life policies issued on a substandard basis generally had the most favorable persistency experience.

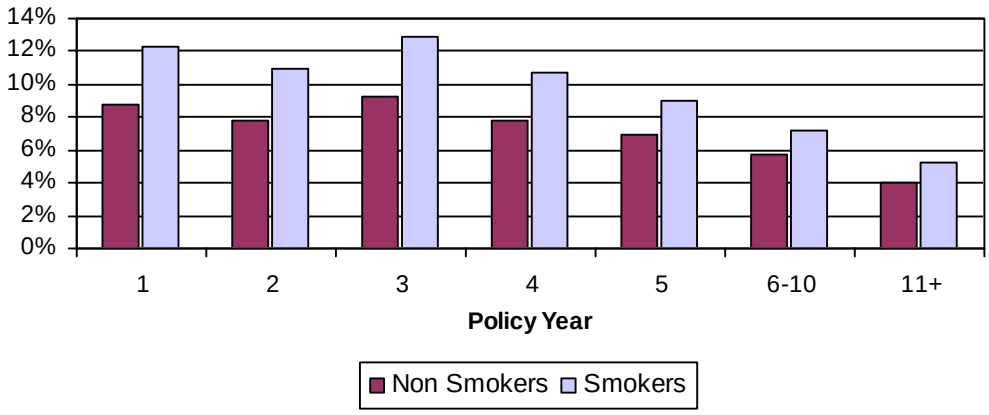
Figure 34
Universal Life Policy Lapse Rates by Risk Class
Includes 7 Companies



## SMOKING STATUS

The universal life sample for the current study is over 90% nonsmoker and lapse rates for smokers are significantly higher than for nonsmokers on both a policy and a face amount basis (Figure 35).

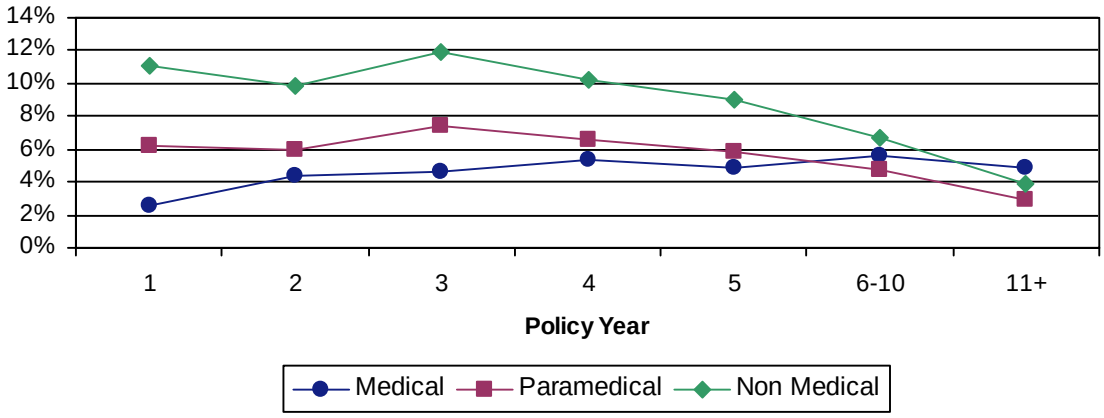
Figure 35
Universal Life Policy Lapse Rates by Smoking Status
Includes 11 Companies




## UNDERWRITING METHOD

As with whole life and term insurance, universal life insurance policies issued on a nonmedical basis exhibited higher rates of lapse than policies that underwent a more rigorous underwriting process (Figure 36). The nonmedical category includes policies sold at the worksite or through direct response channels. It also includes a small sample of universal life policies that were converted from term insurance plans.

Figure 36
Universal Life Policy Lapse Rates by Underwriting Method
Includes 7 Companies



## DEATH BENEFIT OPTION

The universal life policy sample for the study is split approximately 75% level death benefit and 25% level net amount at risk. There is little difference in lapse experience by death benefit option; however, on a policy basis, lapse rates tended to be slightly higher for policies that had elected the level net amount at risk (Figure 37). Experience is very similar on a face amount basis (Figure 38).

Figure 37
Universal Life Policy Lapse Rates by Death Benefit Option
Includes 8 Companies

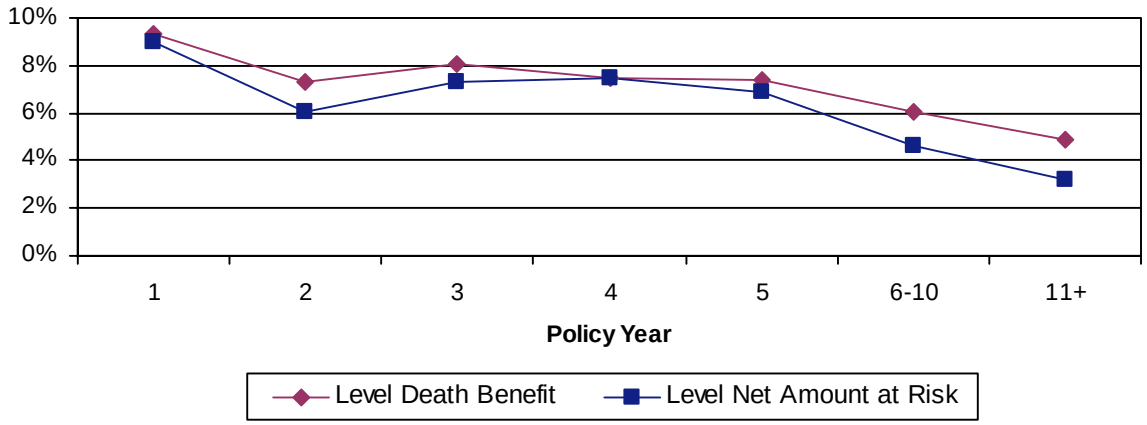
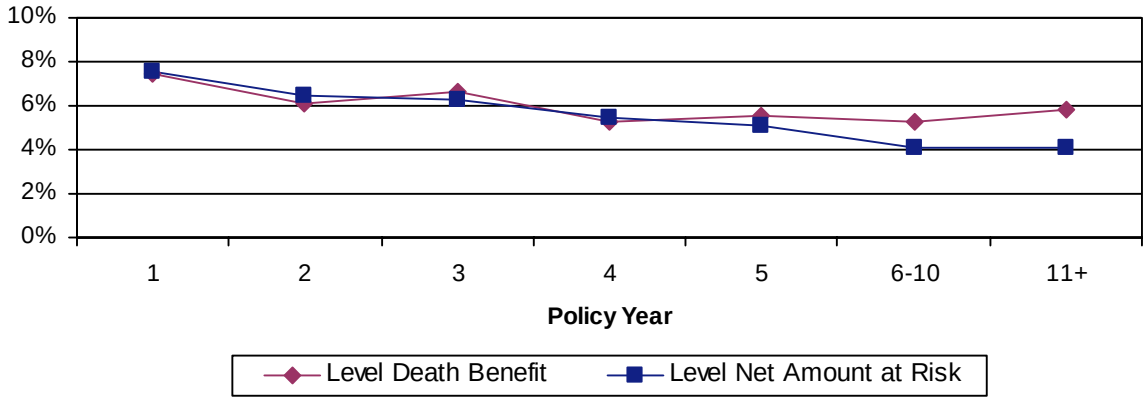



Figure 38
Universal Life Face Amount Lapse Rates by Death Benefit Option
Includes 8 Companies



# VARIABLE UNIVERSAL LIFE INSURANCE

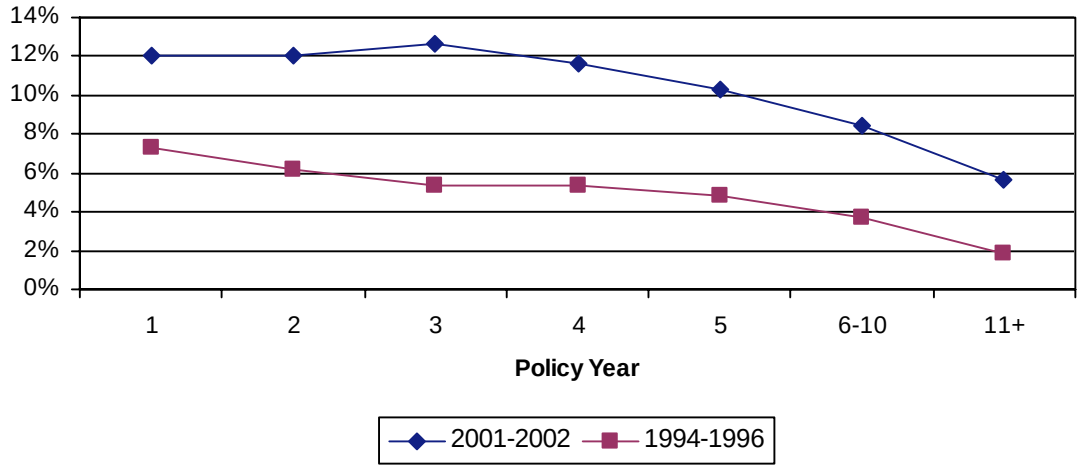
The variable universal life insurance portion of this report is based on data submitted by six VUL carriers. Table 6 shows policy activity during the observation period for variable universal life plans.

Table 6
Variable Universal Life Coverage Activity Reported During Observation Period
Percentage of Policy Records Submitted

| Termination activity | Percent of Policies |
|---|---|
| Lapse for full surrender or insufficient cash value | 8.2% |
| Death | 0.3 |
| Converted to another plan of insurance | 0.0 |
| Expiry/maturity | 0.0 |
| Remaining in force | 91.5 |
| **Total** | **100.0%** |

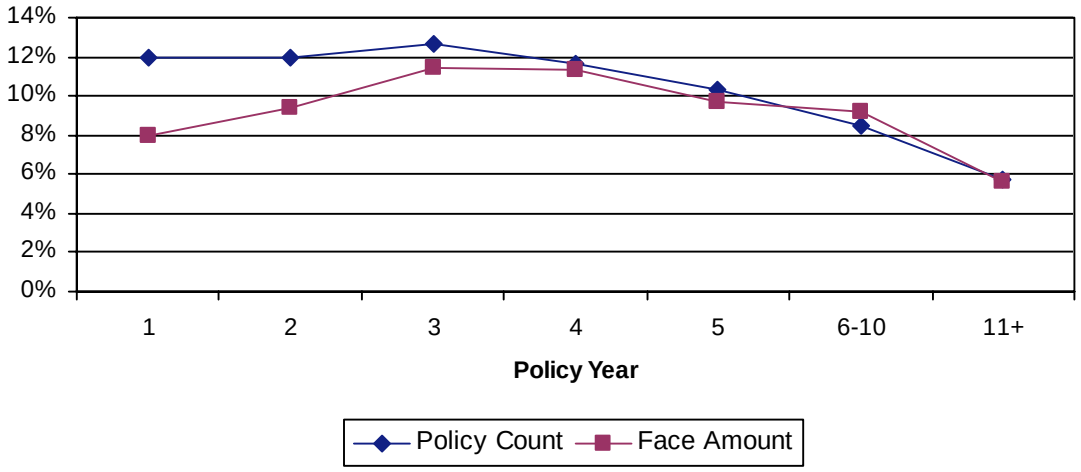
The overall lapse rate for variable universal life plans covered by the current study was 8.5% on a policy basis and 8.8% on a face amount basis. Figure 39 below shows policy lapse rates by year for variable universal life plans from the 1994-1996 and 2001-2002 experience periods. Note that lapse rates were significantly higher during the 2001-2002 period of observation. This is likely the result of the poor equity market performance and continual volatility of returns over the observation period of the current study. Many policyholders had become disillusioned with variable products after seeing their account values plummet. And, in the case of variable universal life plans, in many instances, additional unplanned premium payments were required to keep policies in force.

Figure 39
Variable Universal Life Policy Lapse Rates




Rates of lapsation for variable universal life plans were generally lower on a face amount basis than on a policy basis — indicating a tendency for smaller policies to lapse (Figure 40).

Figure 40
Variable Universal Life Face Amount Lapse Rates



## GENDER

Variable universal life policies in the current sample are distributed 60% male and 40% female by policy count and 66% male and 34% female by face amount. The average face amount for males is $225,000, while the average for females is $180,000. In contrast to universal life insurance experience, on a policy basis, rates of lapsation for male variable universal life policyholders are generally higher than those of females for all policy years (Figure 41). And, with the exception of policies in force for longer than 10 years, the same relationship is seen on a face amount basis (Figure 42).

Figure 41
Variable Universal Life Policy Lapse Rates by Gender
Includes 6 Companies

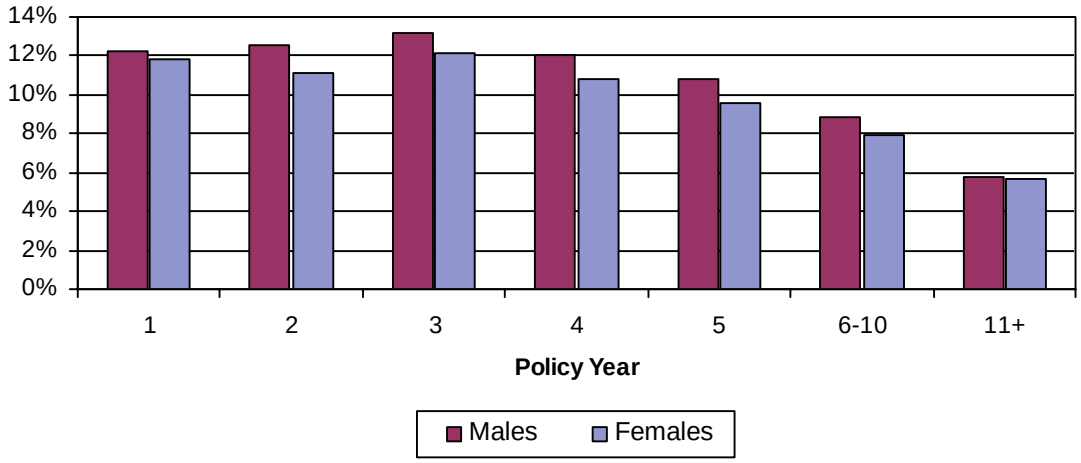
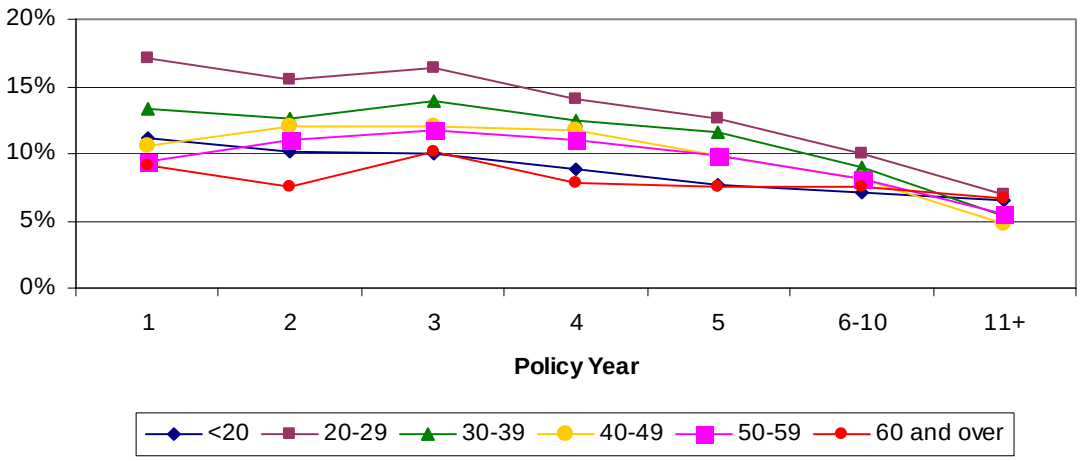



Figure 42
Variable Universal Life Face Amount Lapse Rates by Gender
Includes 6 Companies

## ISSUE AGE

As with other permanent individual life insurance products, variable universal life insurance lapse rates are highest at issue ages 20-29 and lowest at issue ages over 60 (Figure 43).

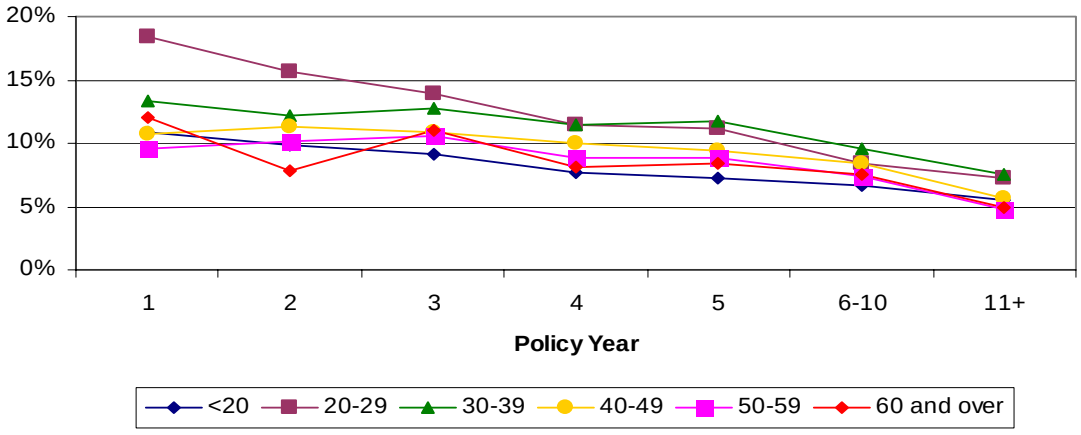
Figure 43
Variable Universal Life Policy Lapse Rates by Issue Age Group
Includes 6 Companies




## ATTAINED AGE

We see a similar pattern of lapse by policy year and attained age (Figure 44).

Figure 44
Variable Universal Life Policy Lapse Rates by Attained Age Group
Includes 4 Companies

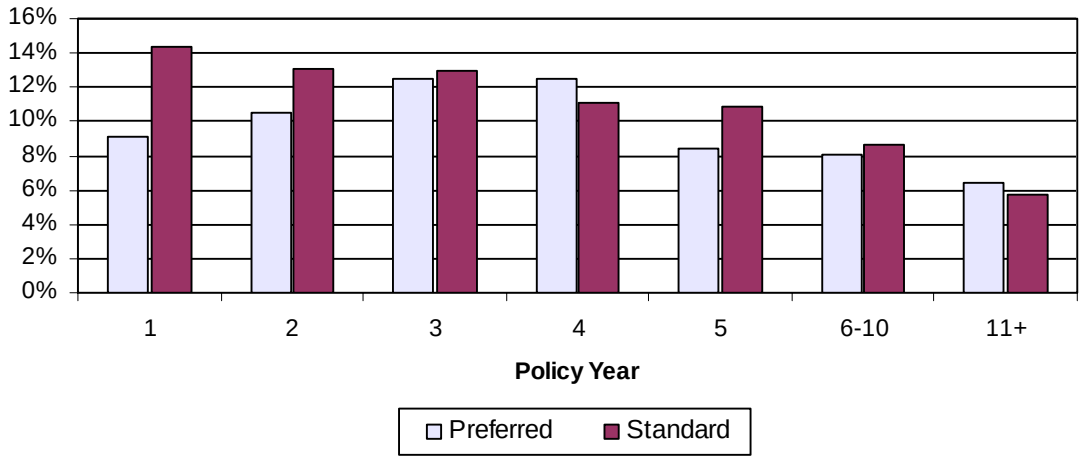


## RISK CLASS

The variable universal life policies in the current study are approximately 10% preferred and 90% standard or substandard by underwriting category. Like universal life, lapse rates for variable universal life insurance policies issued on a preferred basis are lower than lapse rates for policies issued on a standard basis at most policy durations (Figure 45).

Figure 45
Variable Universal Life Policy Lapse Rates by Underwriting Class

Includes 6 Companies

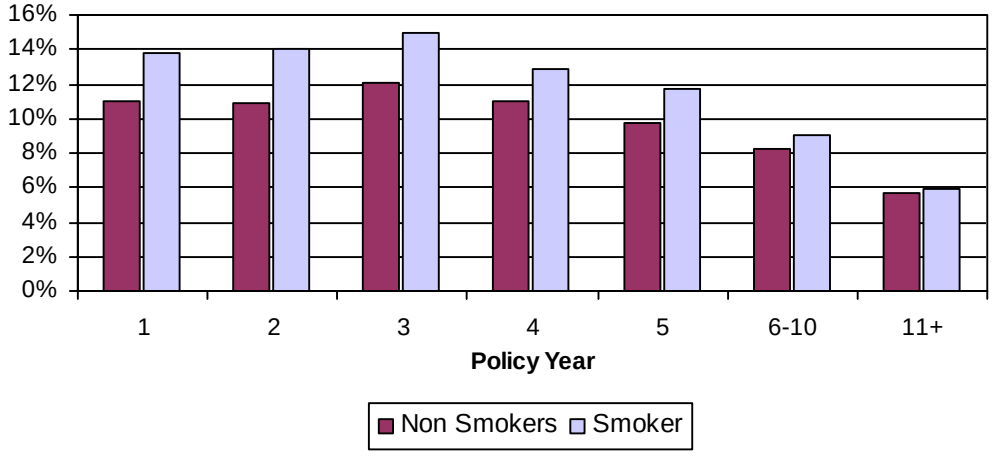



## SMOKING STATUS

Approximately 15% of variable universal life policies in the current study were issued with smoker rates, while 85% were issued on a nonsmoker basis. Like traditional universal life insurance, for variable universal life products, lapse rates for smokers are higher than nonsmokers (Figure 46).

Figure 46
Variable Universal Life Policy Lapse Rates by Smoking Status

Includes 5 Companies



# PREMIUM PERSISTENCY EXPERIENCE FOR FLEXIBLE PREMIUM PRODUCTS

For universal life and variable universal life plans, which allow for flexible premium payments, product profitability is impacted by both the rate of surrender or lapse, as well as the premium persistency and cash flow patterns. Six participating carriers were able to provide data to support a review of premium persistency for universal life and variable universal life products.

This section of the report will examine the following premium persistency measures for UL and VUL plans:

- Premium Payment Ratio
- Excess Premium Ratio
- Total Premium Collections Growth Ratio

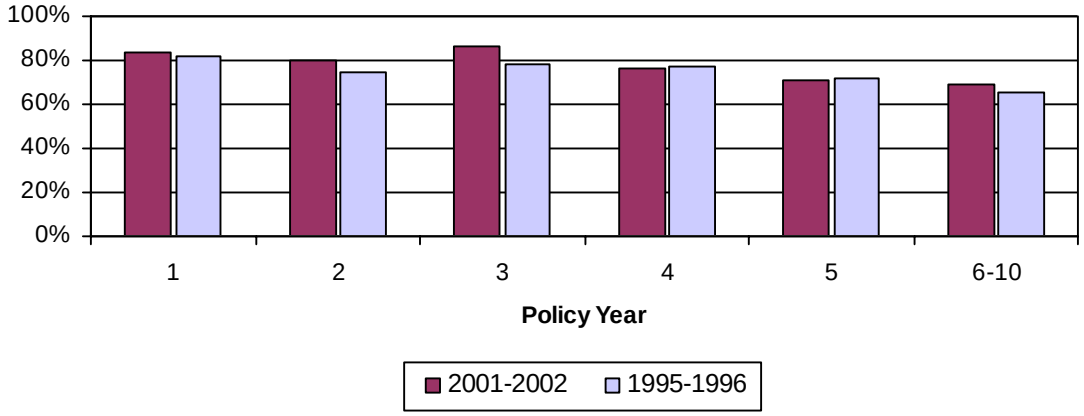
These measures are defined and discussed in detail in the LIMRA report *Universal Life: A New Approach to Measuring Premium Persistency* (1985).

## PREMIUM PAYMENT RATIO

The premium payment ratio measures the rate of premium payment up to the planned level on only those policies that are in force at the end of the observation period. Premium payments are calculated at the individual policy level and can be used to determine where lapses are likely to occur in order to help companies design and focus their conservation efforts. Policies that pay smaller percentages of the planned premium than in prior years may be close to lapse or surrender. The rates could either be tracked for an entire block of business or at the individual policy level.

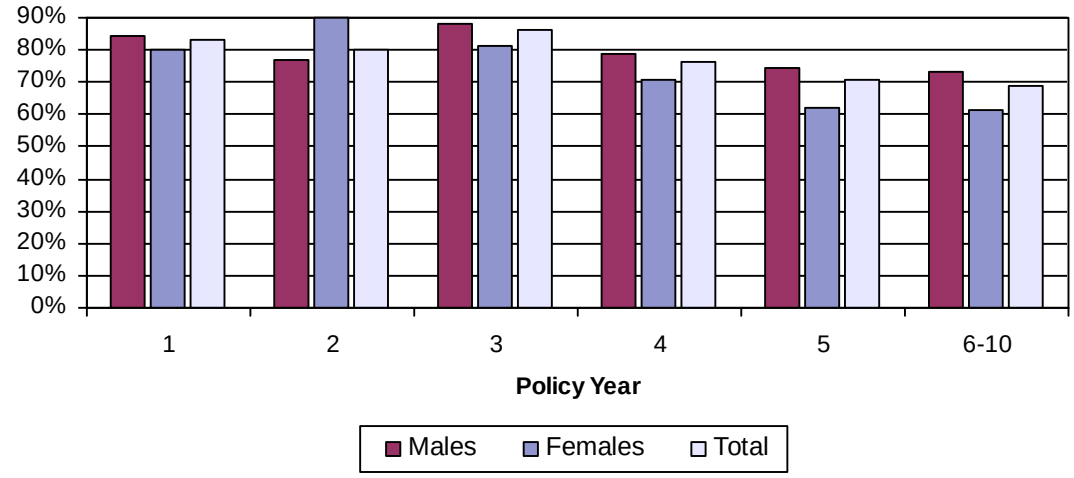
Premium payment ratios for flexible premium products are shown in Figure 47 below for both the current study and an earlier study that LIMRA published in 2001. Note that premium payment ratios have increased somewhat for business in the first three years, but have decreased overall for policies that are in years 4 and later. This may be due at least in part to the fact that the majority of business underlying both samples is universal life. This business includes some of the newer UL plans sold with strong no lapse guarantees. In order to maintain the death benefit guarantee, policyholders are in essence required to make payments at or above the no-lapse premium level. And, since the guaranteed premium level is often higher than the minimum premium or billed amount, this may have contributed to some of the increased funding in the early durations. In addition, it should be noted that, since these two samples do not represent an identical group of contributing companies, some differences are due to variations in individual carrier experience.

Figure 47
Premium Payment Ratios
Flexible Premium Products



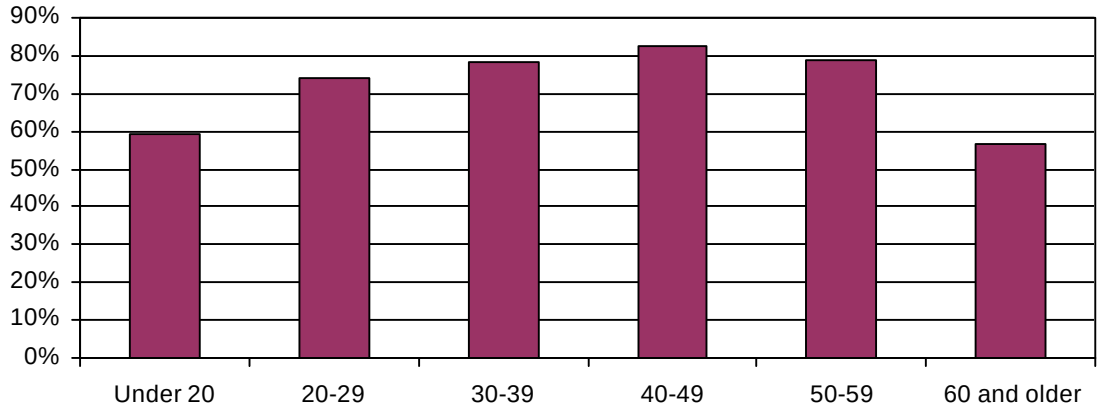

Males generally paid a greater portion of the planned premium than females did during the observation period of the current study (Figure 48).

Figure 48
Premium Payment Ratios — Males versus Females
Flexible Premium Products



And, looking at all policy years combined, premium payment ratios increase with age at issue until about age 55 when they begin to fall off again (Figure 49).

Figure 49
Premium Payment Ratios — By Issue Age Group
Flexible Premium Products



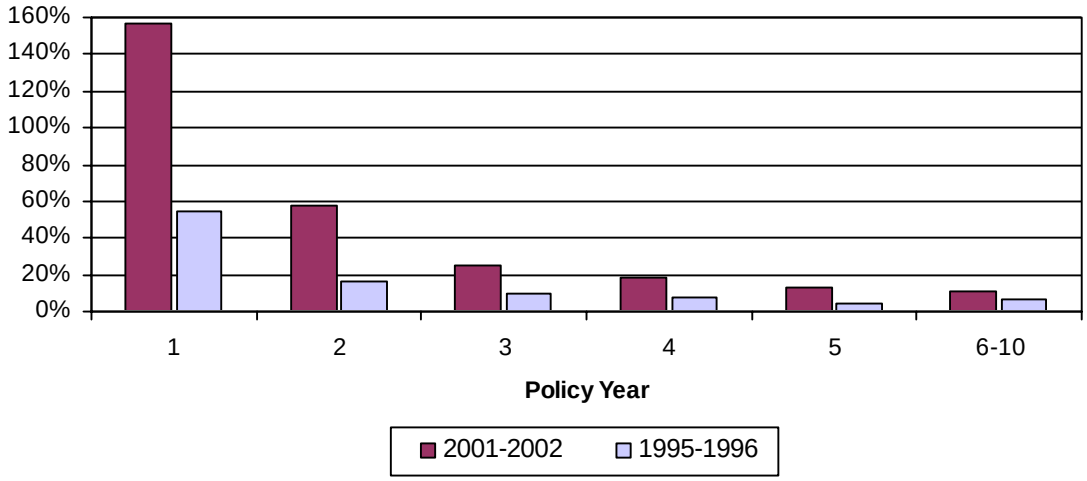

## EXCESS PREMIUM RATIO

Excess premiums are defined as any amounts paid into a universal life or variable universal life policy greater than the planned premium for a given policy year. For policies in their first year, excess premiums often stem from cash value rollovers due to internal or external replacements. In renewal years, policyholders may "dump in" additional premium in order to take advantage of competitive credited rates or favorable market returns. Or, as in recent years, additional premium payments may be required to keep the policy in force during market downturns. The excess premium ratio is equal to the ratio of excess premiums collected for the given policy year to expected planned premiums for that year.

Figure 50 shows excess premium ratios for flexible premium products in the current study, as compared to rates experienced during the mid 1990s. Note that excess premium rates have increased significantly, especially in the early policy years. And, as in past studies, the vast majority of excess premium is paid during the first few policy years. As mentioned earlier, the majority of policies underlying these results are universal life plans. And, during the observation period of the current study, there was a good deal of replacement of existing universal life and variable universal life policies with updated and more competitive product designs, which may explain some of the increased excess premium in early durations.

Figure 50
Excess Premium Ratios

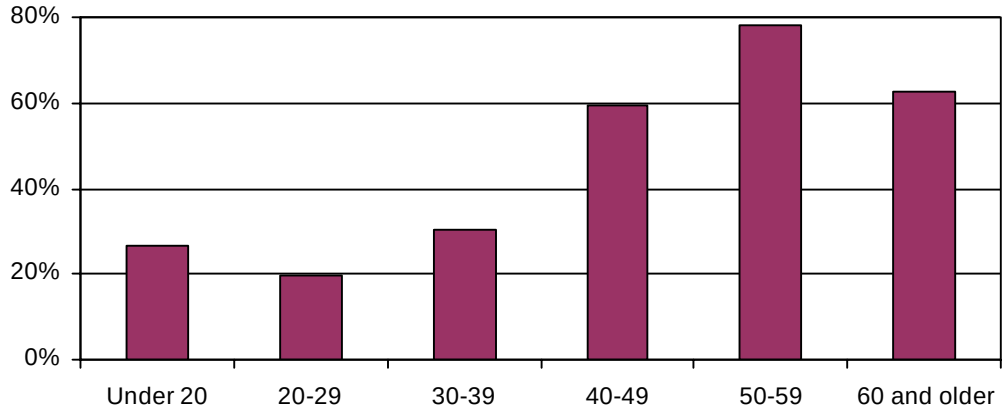
Flexible Premium Products




For the policies underlying the current study, excess premium ratios increased significantly with increasing age at issue (Figure 51). Although premium payment ratios fall off for issues ages over 50, excess premium ratios continue to increase. This is due to the fact that calculations are made at the individual policy level and then aggregated and the largest deposits of excess premium tend to be made by older buyers likely through rollovers from existing plans.

Figure 51
Excess Premium Ratios — By Issue Age Group

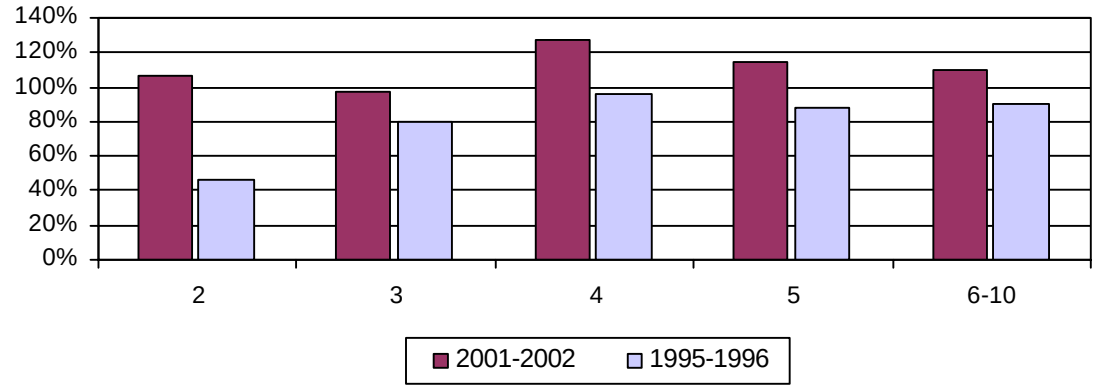
Flexible Premium Products



## TOTAL PREMIUM COLLECTION GROWTH RATIO

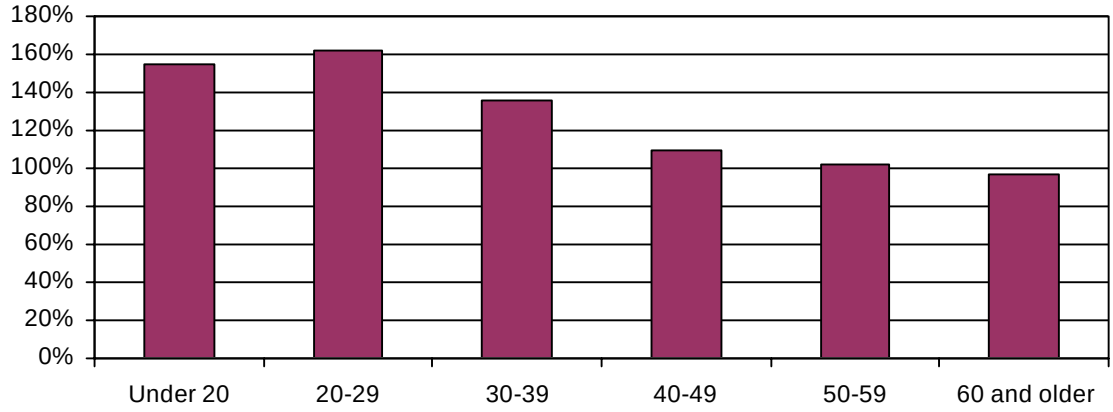
The final cash flow measure to be discussed is the total premium collection growth ratio, defined as the ratio of the premiums collected in the current policy year to the premiums collected in the previous policy year. Note that, in line with experience on planned and excess premium payment ratios, total premium collection ratios have increased since the mid-1990s (Figure 52). For the six companies that provided data for the study of premium persistency experience, total premium collection for the current year now exceeds amounts collected in the prior year for most policy durations.

Figure 52
Total Premium Collection Growth Ratios
Flexible Premium Products




Overall, year over year premium collections generally decrease with increasing age at issue and this pattern is consistent across all policy years (Figure 53).

Figure 53
Total Premium Collection Growth Ratios — By Issue Age Group
Flexible Premium Products



# PARTICIPATING COMPANIES

Amerus

CNA

Equitable Life Insurance Company

Farm Family Life

Federated Life

Government Personnel Mutual Life

Guardian Life Insurance Company of America

Hartford Life

Horace Mann

Liberty Mutual Life

Manulife

MassMutual

MetLife

MONY

New York Life

Northwestern Mutual Life

Phoenix Life

Prudential

SunLife

TIAA-CREF

Travelers Life and Annuity

USAA

# RELATED LINKS

The following links are valid as of 12/31/05.

## LIMRA

*Individual Life Insurance Persistency* (2001)

This study examines individual life insurance persistency experience for 13 participating U.S. companies. The report provides lapse rates separately for traditional whole life, term, universal life, and variable universal life products. Lapse results are reviewed for a variety of policy and product features, which explains some of the variations in experience from one study period to the next.

http://www.limra.com/members/abstracts/3506.aspx

*Finding New Customers: Who is Buying Individual Life and Why?* (2005)

This report is the first in a series of reports exploring the attitudes and opinions of recent individual life buyers. It defines the differences in the wants and needs of buyers of different age and income groups. It explores why consumers from different backgrounds buy insurance, what they are looking for in a policy and how this shapes the type of product they buy.

http://www.limra.com/members/abPdf/4909.pdf

*A Universal Challenge: The Future of Flexible Premium Products* (2005)

This report presents an overview of the market for universal life (UL) and variable universal life (VUL) products based on data collected from 26 companies representing nearly 70% of the UL and VUL sales in 2004 and supplemented by data from LIMRA's Individual life Insurance Sales survey. Trends in product design, distribution, sales results, and producer compensation are examined.

http://www.limra.com/abstracts/4943.asp

*US Individual Life Insurance Sales, 2005 3rd quarter* (2005)

This report tracks individual life insurance sales results measured by annualized premiums, face amount, and number of policies, with results reported separately for various distribution systems. Contributors include 76 U.S. companies and their 83 subsidiaries. The study tracks separate data for individual products such as universal life, term, variable life, variable universal life, survivorship life, and whole life. The survey also tracks universal life interest-rate data.

http://www.limra.com/members/abPdf/4894.pdf

*US Individual Life Insurance Sales Trends, 1975-2004* (2005)

This report provides industry estimates of individual life insurance sales results measured by annualized premiums, face amount, and number of policies.

http://www.limra.com/members/abPdf/1746.pdf

*US Long-Term Care Insurance Persistency Experience* (2004)

This report represents the first study conducted jointly by LIMRA International and the Society of Actuaries (SOA) Long-Term Care Experience Committee that focuses on long-term care insurance (LTCI) persistency. The study examines voluntary lapse and total termination activity for calendar years 2000 and 2001. Overall, the results indicate that LTCI persistency has continued to improve; however, the current improvement seems to be coming from the individual lines of business rather than the group lines.

http://www.limra.com/members/abPdf/4482.pdf

*Individual Disability Income Insurance Lapse Experience* (2004)

This report examines individual disability income lapse experience including both guaranteed renewable and noncancelable business. Eight of the major individual DI writers submitted data representing experience for years 1999 through 2001.

http://www.limra.com/members/abPdf/4661.pdf

## Non-LIMRA

*1984-2001 Long-Term Care Experience Committee's Intercompany Study*

Based on data from twelve participating companies, this report represents the first study of lapse experience for Canadian Universal Life Level Cost of Insurance plans.

http://www.soa.org/ccm/content/areas-of-practice/special-interest-sections/long-term-care-insurance/actuarial/papers-presentations-research-resources/1984-2001-long-term-care-experience-committees-intercompany-study/