

An Analysis of Life Insurer Retention Limits

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ABSTRACT

This study examines the relationship between ceding life insurers' retention limits on an insured life basis and certain operational and financial characteristics of the companies. Analysis is performed using 97 major U.S. insurers with 1987 assets ranging from \$108 million to \$32 billion. Retention limits for these insurers vary from \$25,000 to \$20,000,000 per insured life. Five factors are shown to have the greatest impact on life insurer retention limits. Not unexpectedly, firm size is found to be the most important factor. Four other explanatory factors, each statistically significant at the 0.01 level, provide important additional insight into this relationship. These factors are (1) form of insurer organization (i.e., mutual or stock), (2) the firm's emphasis on new business, (3) average policy size, and (4) the company's emphasis on term insurance. Collectively, the principal components regression model explains nearly 90 percent of the total variation in retention limits for the sample insurers.

The life reinsurance decision centers on the establishment of retention limits. Retention is the amount of any insured loss to be borne by the primary (or ceding) company. Life retention limits normally are expressed as an amount per insured life. Claim amounts in excess of the insurer's retention are the responsibility of its reinsurers. This study examines the relationship between the size of ceding companies' retention limits and certain insurer characteristics.

The setting of an appropriate retention limit is a non-trivial decision for an insurer. It ultimately affects both the risk exposure and the profitability of the ceding company. It establishes the maximum individual claim amount that the insurer believes it can tolerate, given its financial and operating characteristics. Further, the dollar retention limit is directly related to other elements in the total reinsurance process. For example, an automatic binding

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The helpful comments of an associate editor and two referees are gratefully acknowledged.

limit (i.e., the maximum amount for which the ceding insurer binds the reinsurer under an automatic reinsurance treaty) is usually expressed as a multiple of the retention limit. Second, a subsequent increase in the retention limit affects the amount of previously ceded insurance that the primary insurer can recapture.

It can be expected, *a priori*, that different financial and operational characteristics of life insurers, together with differences in their products and markets, will lead to varying motives for establishing retention limits. This study seeks to shed light on insurer characteristics that may account for differences in these retention limits.

Literature Review

The literature describing the various forms of reinsurance agreements is extensive. In the life insurance area, the works of Dowsley (1982), Dukes (1982), and Gold (1978) may be noted.

Prior work on the analysis of both life and property-liability reinsurance (and insurance) decision processes can be classified into three major categories: (1) objectives of reinsurance, (2) normative methods, and (3) empirical studies. Each category is discussed below.

Objectives of Reinsurance

A review of the literature suggests numerous objectives of reinsurance. The following listing of the primary uses and objectives of life reinsurance can be considered representative and reasonably exhaustive (if not redundant): (1) risk spreading—minimizing the concentration of risk, (2) surplus relief—reducing surplus strain caused by new business writings, (3) stabilization of overall mortality experience, (4) stabilization of operating results, (5) reduction in the probability of insolvency, (6) minimization of the potential for catastrophic losses, (7) transfer of investment or lapse risk, (8) take advantage of reinsurers' underwriting expertise, (9) transfer (or sell) certain classes of business (e.g., substandard issues), (10) increase the ceding company's capacity for growth, (11) tax minimization—in specific situations reinsurance may reduce the ceding company's tax liability, and (12) assist the ceding company when experimenting with a new market.

Normative Methods

Optimal reinsurance coverage was examined by Beliveau (1984), Mossin (1968), Samson and Thomas (1983), and Wiser (1985). Signalling equilibrium, expected utility, and simulation methodologies were used in determining optimal reinsurance levels.

Pareto optimal risk exchanges between insurers and the design of Pareto optimal reinsurance contracts were examined by Borch (1962, 1974), Benktander (1975), and Verbeek (1966). The equilibrium conditions

necessary for reinsurance have been analyzed by Borch (1974) and Pressacco (1979).

The normative studies cited focused on the risk retention decision in property-liability insurance. Few published studies exist on the selection of life reinsurance retention limits, and none deal directly with the question of retention selection on a per insured life basis or relate the retention decision to an insurer's financial or other operating characteristics. Rosenthal (1947) examined the random portion of total mortality fluctuations and provided a simple method for determining the retention limit. His approach involved an application of the law of large numbers to the reinsurance decision. As expected, the number of insured lives and the variation in insurance amounts are the two important factors in his formula.

Pentikainen (1952) applied the concept of collective risk theory to the retention limit problem. Setting a probability of ruin of 1.0 percent, he provided a formula for retention limit establishment. The collective risk theory approach may be criticized both for its arbitrary nature in establishing the ruin probability and for its emphasis on "safety first."

Empirical Studies

Mayers and Smith (1990) examined the relationship between a property-liability insurer's overall level of reinsurance and selected financial and operating characteristics. The Mayers and Smith study focused on aggregate reinsurance demand for all insured exposures, while the current study examines reinsurance demand per insured exposure. This leads to the use of a different dependent variable (i.e., a ratio of aggregate reinsurance premiums ceded to total premiums vs. a per insured dollar retention limit) and the use of a somewhat different regression methodology.

Gottheimer (1983) hypothesized a positive linear relationship between the retention limit selected by a property-liability insurer and its assets, policyholders' surplus, premium volume, and loss ratio. Using stepwise regression, he concluded that the two most significant factors to consider in selecting an appropriate retention level were assets and premium volume. Although restricted to the retention decision in property-liability insurance, Gottheimer's approach is somewhat similar to that used in this study. No published empirical study on life retention limits exists, except some documentation of reinsurance and retention data on a limited scale.¹

¹ Cardinal (1984) reports that retention limits vary generally from a low of 0.5 percent of capital and surplus to a high of 2.0 percent. He recommends a retention limit equal to 2.0 percent of capital and surplus but provides no justification for this recommendation. Taylor, et al. (1967/1968) report the results of a survey of 104 life insurers that shows retention limits of 1.0 to 1.5 percent of capital and surplus, with the percentage decreasing as capital and surplus increase. Munich American Reassurance Company (1988) summarizes its survey results on ordinary life retention limits according to insurer distributions by total assets, capital and surplus, and the amount of ordinary business in-force, each a variation of insurer size.

Research Methods

Specific Research Issues

The focus of this study is on the determinants of retention limits established by life insurers in proportional reinsurance transactions. The retention limit is defined as the amount of ordinary life insurance retained by the ceding insurer on the life of any insured individual (under all policies, collectively). For the companies included in the study, the retention limits varied from \$25,000 to \$20 million.

Although the major purpose of the study is to identify the various determinants of individual life retention limits and their relative importance, the final model can also be used to forecast retention limits in terms of specific company financial and operating characteristics. The primary hypothesis to be tested is that a linear relationship exists between the size of a ceding insurer's per insured life retention limit and selected insurer financial and operating variables.

Variable Selection and Specification

The dependent variable examined in this study is the ceding company's per insured life retention limit in dollars. The insurance literature suggests numerous possibilities for explanatory independent variables. Black and Skipper (1987, p. 431) indicate that the size of the individual retention limit is a function of several economic and operational factors including insurer surplus, quality of the insurer's agents and underwriting staff, average policy size, distribution of insurance in force (e.g., by amount, grouping by age and sex), and distribution of new business.

Conceptually, other factors including amount of insurance in force, amount of new business written, premium volume, lapse rates, organization form (mutual vs. stock), asset size, profitability, and term/whole life mix potentially may affect the retention decision. Unquestionably, the prices that ceding companies pay for reinsurance should be a major factor in the ceding company's establishment of its retention limit.

Some of these variables cannot be (or have not been) measured quantitatively (e.g., quality of underwriting department). Also, publicly available data do not exist for other potential explanatory variables (e.g., reinsurance prices).

Ultimately, 17 independent variables were selected for analysis. Many of these variables probably measure the same (or similar) insurer characteristics. For example, company size can be measured in many ways, including admitted assets, capital and surplus, and premium volume (i.e., direct premiums written).

Selection of Sample and Data Sources

Several criteria were used in selecting the life insurer sample. Because the data needed for the study were obtained from the annual editions of *Best's Insurance Reports*, the first criterion, of necessity, is that information

on the insurer is available in these annual reports. The 1988 life-health edition contains selected 1987 financial statement information, including retention limits, on approximately 1,600 U.S. and Canadian life and health insurers.

To avoid possible distortion in the results by very small life insurers, only those insurers with at least \$100 million in total assets (less separate accounts) at the end of both 1986 and 1987 were selected. Further, relatively new companies (i.e., those commencing their operations after 1976) were omitted from the sample. Because Canadian insurer regulation differs from U.S. regulation, Canadian insurers were deleted from the sample. Also, fraternal benefit societies and savings bank life insurers were omitted because of their special structure and regulation.

Many life insurers are heavily engaged in the sale of annuities or health insurance. Because this study examines ceding company retention limits in ordinary life insurance transactions, only those insurers whose business is primarily the marketing of individually issued life insurance are examined. Thus, if a company's ratio of life reserves to net policy reserves equaled or exceeded 70 percent in both 1986 and 1987, the company was retained. Otherwise, the insurer was removed from any further analysis.

A few additional companies were omitted from the sample because of data insufficiency or other data problems. The resulting sample consisted of 97 life insurers whose admitted assets (including separate accounts) range from \$108 million to \$31.8 billion. The necessary data were collected for each of these insurers and used in the following analysis. Appendix A shows the sample insurers, their retention limits, and selected other data.

Research Results

A cross-section multiple regression model was initially estimated. However, as noted above, several of the 17 selected independent variables that *a priori* might affect the level of retention limit were believed to measure similar insurer characteristics.

Diagnostics applied to the initial multiple regression model strongly suggested the possibility of multicollinearity. Principal components regression was employed to address the multicollinearity issue and to fully utilize information derived from the correlated variables.

Principal Components Analysis

Based on the Scree diagram and mineigen criterion,² six components (factors) were retained in the model. Table 1 shows the initial factor

² The Cattell's Scree Test plots the variance accounted for by each principal component on the characteristic roots and principal components space, and it deletes all components that lie beyond a "bendpoint" in the curve. The Kaiser's mineigen criterion retains principal components with eigenvalues exceeding unity. For the rationale of these criteria, see Cattell (1966) and Cattell and Vogelmann (1977).

Table 1
Initial Factor Loadings Matrix

Variable:	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
1 New Business: %par	0.78*	-0.46*	-0.12	0.25	0.18	0.20
2 In-force: %par	0.76*	-0.47*	-0.12	0.26	0.20	0.18
3 Divs/DPW	0.76*	-0.30	0.07	0.30	0.10	-0.12
4 Org form(mutual=1)	0.74*	-0.46*	-0.11	0.21	0.15	0.25
5 Avg. New policy	0.52*	0.05	-0.41*	-0.33	-0.48*	0.23
6 Agent comm/DPW	0.53*	0.04	0.17	-0.15	0.42*	0.46*
7 Term/total in-force	0.45*	0.77*	-0.11	0.05	0.09	0.24
8 New term/New ord	0.44*	0.75*	0.03	0.21	0.19	-0.26
9 Term/ord in-force	0.43*	0.74*	-0.12	0.03	0.20	0.24
10 New term/new ord	0.44*	0.72*	0.04	0.24	0.17	-0.19
11 Cap and surplus	0.39	0.02	0.82*	-0.27	-0.01	0.01
12 Assets	0.61*	-0.05	0.69*	-0.32	-0.03	-0.04
13 DPW	0.61*	-0.03	0.65*	-0.37	-0.10	-0.02
14 Return on equity	0.27	0.09	0.43*	0.56*	-0.46*	0.30
15 Net op gain/NPW	0.35	0.19	0.50*	0.53*	-0.34	0.28
16 Avg in-force policy	0.39	0.28	-0.41*	-0.42*	-0.40	0.34
17 Lapse ratio	-0.53*	0.04	0.19	-0.22	0.56*	0.35
EIGENVALUE	5.15	3.08	2.48	1.64	1.43	1.04
% OF TOTAL VARIANCE EXPLAINED	30%	18%	15%	10%	8%	6%
						87%

*Denotes principal component loadings whose absolute values are larger than 0.40.

Table 2
Varimax Factor Loadings Matrix

Variable:	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
1 NEWPAR	0.96*	0.02	0.11	0.10	-0.10	-0.12
2 IFPAR	0.96*	0.01	0.09	0.06	-0.11	-0.12
3 OF	0.92*	-0.01	0.11	0.14	-0.08	-0.08
4 DIVDPW	0.75*	0.13	0.24	-0.11	-0.07	-0.35
5 NEWTOL	-0.02	0.91*	0.10	-0.10	-0.06	-0.23
6 NEWTTOT	0.02	0.88*	0.10	-0.09	0.00	-0.21
7 IFTTOT	0.05	0.87*	0.04	0.34	0.04	0.06
8 IFTOL	0.07	0.86*	0.03	0.28	-0.02	0.14
9 AA	0.21	0.09	0.95*	0.03	-0.04	-0.08
10 DPW	0.17	0.07	0.94*	0.12	-0.04	-0.10
11 CS	0.06	0.07	0.93*	-0.08	0.11	0.05
12 IFAVG	0.00	0.20	0.02	0.88*	-0.14	-0.09
13 NEWAVG	0.18	0.05	0.04	0.83*	-0.14	-0.29
14 ROE	-0.09	-0.05	0.00	-0.08	0.93*	-0.03
15 NOGNPW	-0.19	0.03	0.04	-0.17	0.90*	0.07
16 LAPRATIO	-0.23	-0.08	-0.02	-0.23	-0.06	0.83*
17 COMMDPW	-0.21	-0.10	-0.07	-0.12	0.08	0.80*
EIGENVALUE	3.49	3.20	2.77	1.84	1.78	1.73
% OF TOTAL VARIANCE EXPLAINED	21%	19%	16%	11%	10%	10%
						87%
						TOTAL 14.82

*Denotes principal component loadings whose absolute values are larger than 0.40.

loadings matrix whose elements are correlation coefficients between the original 17 variables and the six factors.

The six factors account for 87 percent of the total variance in the 17 explanatory variables. Using the varimax rotation method, the six factors were rotated again to improve result interpretability.³ Table 2 shows the varimax factor loadings matrix.

A principal components regression model using the six varimax rotated factors as explanatory variables is estimated through ordinary least squares (OLS).⁴ Table 3 shows the tentatively named factors, their regression coefficients, and t-statistics (in parentheses below the corresponding coefficient). The overall model is statistically significant at a p-value of 0.0001. The coefficients of five of the factors (or insurer characteristics) are significant at the 0.01 level, with the profitability coefficient significant at the 0.10 level.

Table 3
Summary of Principal Components Regression Results

Factors	Dependent Variable: Square Root of Retention	Partial R²	Expected Sign of Coefficients
1 Mutuality	4.25 (6.82)**	0.054	+
2 Concentration on Term Business	2.70 (4.33)**	0.022	-
3 Firm Size	15.82 (25.38)**	0.754	+
4 Average Policy Size	3.03 (4.87)**	0.028	+
5 Profitability	-1.14 (-1.82)*	0.004	+
6 Concentration on New Business	-3.28 (-5.26)**	0.032	-
Intercept	20.65 (33.29)**		
Degrees of Freedom (Regression Error)	90		
F-value	127.31		
Adjusted R ²	0.89		

t-statistics are shown in parentheses below the corresponding coefficient.

**Significant at the 0.01 level.

*Significant at the 0.10 level.

³ See Green (1978) for a discussion of various rotation methods, including the varimax method.

⁴ The authors believe that a principal components regression model is the appropriate model to use here. It is acknowledged, however, that the results when projected back in terms of the original variables are sensitive to some methodological details (e.g., the number of components retained).

As seen in Table 3, the dependent variable is the square root of the dollar retention limit. This transformation was performed to better meet the homoskedasticity assumption that underlies the OLS model.

Interpretation of the Regression Relationship

As is common in studies using factor and component analysis, a certain amount of judgment must be used in explaining the results. Factor 1 has been identified as the mutuality dimension. This is because high correlations were found between Factor 1 and the ratios of participating insurance to total insurance (both new and in-force business), mutual form of organization, and the ratio of policyholder dividends to direct premiums written. Participating life insurance and policyholder dividends are characteristic of mutual life insurers. The expected sign for this factor was positive because, in general, premiums for participating life insurance have built-in margins for dividends and, hence, result in a larger premium inflow, *ceteris paribus*. This fact should provide some additional margin to absorb unusual fluctuations and, therefore, should result in larger retentions.

The model sign for Factor 1 is positive. Thus, higher retention limits are associated with the mutuality dimension. Because the mutuality dimension is orthogonal to the "firm size" dimension (factor), these findings are not explained by the fact that, in general, mutual life insurers are of substantial size. Other reasons might also underlie the observed relationship. Many stock life insurers reinsure significant amounts of their direct writings with a parent insurer or other members of a controlled group of insurers. Since mutual companies cannot be owned by another entity, no possibility exists of a pass-through of insurance (through reinsurance transactions) to an insurance company parent. This difference in ownership may partly account for a lower retention limit for stock insurers.

Factor 2 indicates a ceding company's concentration of its product lines in term insurance. This conclusion is evidenced by high loadings between Factor 2 and the four variables that represent ratios of term insurance to aggregate insurance amounts. It was believed that insurers specializing in term insurance would have lower retention limits because term life products, carrying proportionately larger net amounts at risk over time and smaller premium rates, were thought to represent more risk to the insurer, *ceteris paribus*.

However, the model sign for Factor 2 is positive. It may be that insurers concentrating in term insurance sales may be more aggressive in risk-taking and, therefore, may be more inclined to retain larger amounts. Additionally, because term premium rates are lower and margins smaller than those for whole life, it may also be that insurers with large proportions of term insurance desire to retain much of the face amount to maximize the

available cash flow for investment purposes.⁵ Again, since Factor 2 and the "average policy size" dimension are orthogonal, the larger policies typically sold in the term market do not explain the positive sign of Factor 2.

The positive sign observed in the model for Factor 3, firm size, is consistent with the expected sign. Firms with large admitted assets, capital and surplus, and premium volume would reasonably be expected to retain greater amounts of insurance. Insurers with large amounts of statutory capital and surplus can retain greater amounts per insured because they are less affected by surplus strain caused by the writing of new business.

The sign for average policy size (Factor 4) also is as expected. The positive relationship between average policy size and retention limit simply indicates that as average policy size increases, insurers show a greater willingness to retain larger amounts per insured life. This appears to be consistent with the use of reinsurance to minimize the potential adverse effects on a ceding company's financial and operating results arising from one or more large death claims—large in relation to the average death claim.

The negative sign observed for the profitability dimension (Factor 5) contradicts the study's *a priori* expectation. The empirical finding suggests that higher profitability is associated with lower retention limits. Profitable insurers might utilize reinsurance for tax purposes to the extent that reinsurance may reduce taxable income. However, restraint should be exercised in attaching too much importance to this finding for several reasons. First, the coefficient is not statistically significant at the conventional level (i.e., 0.05 or less). Second, profitability was measured for a single year only. Insurers usually do not change their retention limits yearly, yet insurer profits may fluctuate widely from year to year. Also, this dimension measures the profitability of the total operations (i.e., group, individual, annuity) of the ceding company, whereas the retention limit is only for the insurer's ordinary product line. Further, the two variables most highly correlated with profitability (i.e., return on equity and the ratio of net operating gain to net premiums written) are measured on a statutory basis. Statutory profitability may be a poor indicator of an insurer's profitability when measured according to generally accepted accounting principles.

Factor 6 has been labeled "concentration on new business." The two variables that exhibit the highest correlation with this dimension are lapse ratio and the ratio of commissions to direct premiums written. The observed sign indicates that a negative relationship exists between an insurer's average lapse ratio and the size of its retention limit. A similar relationship exists between size of retention limit and the commissions ratio. These

⁵ Due to smaller margins available, term insurance may be subject to more stringent underwriting. If priced accordingly, term rates may not support reinsurance rates based on more liberal underwriting.

results are consistent with the contention that ceding companies with high lapse ratios and high commission expenses seek to transfer a portion of these costs to reinsurers through the use of smaller retention limits. High lapse rates and high commission expenses are often a direct result of a large volume of new sales, and in this event ceding insurers are likely using reinsurance for surplus relief.

Factor scores used to derive the regression equation have been standardized to a mean of zero and unit standard deviation. Further, since the factor scores are uncorrelated because of orthogonality, it is reasonably safe to address the relative influence of each factor on retention limits through examination of the partial R^2 's and the regression coefficients.⁶

Table 3 shows that firm size is the most important factor, accounting for approximately 75 percent of the total variation in the retention limits. The other five factors are statistically significant, and they collectively explain slightly more than 14 percent of total variation. The most important of these factors are mutuality and concentration on new business. The profitability factor accounts for only a nominal amount of the total variation in retention limits.

Summary and Conclusions

This study analytically examines life reinsurance retention limits on a per insured basis and their relationships to specific ceding company financial and operating characteristics. A principal components regression model applied to a sample of 97 U.S. life insurers shows that five factors (dimensions) are highly significant in explaining a ceding company's retention level. Of these five factors, firm size (measured by admitted assets, direct premiums written, and capital and surplus) appears to have the greatest impact on insurer retention limits. Collectively, the model explains nearly 90 percent of the total variation in retention limits for the sample insurers.

The authors have not addressed important questions such as: (1) Are primary insurers establishing their per insured retention levels in the most appropriate manner? (2) Are primary life insurer retention limits higher or lower than they should be? (3) What should be the relationship between overall insurer demand for reinsurance and individual insured retention limits? Further research is needed on these questions, especially the last.

⁶ It is reasonably safe to assess the relative importance of the six factors in the sense that while a multicollinearity problem is not present, the standardized regression coefficients are still sensitive to the spacings of the observations on the independent variables. See p. 262 of Neter, et al. (1985).

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Appendix A

Life Insurance Companies in the Sample (97 Companies)

Company Name	Retention Limit (in thousands of dollars)	Capital & Surplus	Admit. Assets	Org. Form	Life Insurance Reserve Ratios (%)	
					86	87
Acacia Mutual LIC	250	79,791	795,812	M	92	92
Academy LIC	100	27,454	207,406	S	78	78
Alfa Life Ins Corp.	100	33,209	258,325	S	71	74
All American LIC	750	117,004	975,049	S	78	79
American Family LIC	200	77,153	518,135	S	96	94
Amer. General Life & Acc	350	681,050	3,472,389	S	76	75
American General LIC	800	281,043	1,666,573	S	74	83
American Mayflower LIC	50	20,544	136,198	S	84	84
American Mutual LIC	250	78,506	415,992	M	90	89
American National IC	500	802,692	3,449,141	S	88	88
American Security LIC	100	17,670	109,038	S	76	77
American States LIC	200	37,404	190,480	S	82	83
Atlanta LIC	25	30,699	126,421	S	86	86
Baltimore LIC	150	23,916	253,759	M	94	94
Bankers LIC of Nebraska	400	88,166	1,101,443	M	76	73
Bankers Union LIC	350	20,567	110,727	S	91	92
Berkshire LIC	750	37,083	589,976	M	79	78
Boston Mutual LIC	100	24,789	246,882	M	81	87
Business Men's Assur Co	750	129,988	990,563	S	76	75
Cal.-Western States LIC	300	131, 975	854,396	S	70	75
Century Life of America	300	65,471	950,009	M	87	87
Charter National LIC	300	31,601	794,102	S	92	93
Colonial Penn LIC	500	116,172	542,986	S	82	84
Columbian Mutual LIC	125	14,974	230,473	M	92	93
Commonwealth Life & Acc	50	45,397	130,399	S	96	97
Commonwealth LIC	1,000	141,380	2,890,195	S	81	81
Connecticut Mutual LIC	3,000	344,586	9,932,257	M	88	88
Continental American LIC	250	60,911	372,106	S	85	73
Continental Western LIC	100	17,650	155,340	S	82	87
Country LIC	850	302,195	1,738,615	S	74	75
Durham LIC	125	63,709	535,229	S	79	76
Equitable LIC of Iowa	500	77,386	1,324,215	S	83	82
Farm Bureau LIC	250	139,924	685,103	S	90	91
Farm Bureau LIC of Mich.	150	50,888	258,154	S	92	89
Farmers and Traders LIC	125	12,305	164,683	M	76	74
Fidelity Bankers LIC	250	39,809	1,214,169	S	86	71
Fidelity Mutual LIC	1,250	42,064	1,052,638	M	88	87
Fidelity Union LIC	500	139,518	667,778	S	84	87
Fort Dearborn LIC	50	24,307	108,400	S	71	70
General American LIC	1,000	169,750	4,369,491	M	80	79
Georgia International LIC	200	22,677	234,202	S	80	80
Globe Life & Accident IC	250	321,921	629,325	S	82	81
Golden State Mutual LIC	50	5,698	119,279	M	98	98
Gov. Personnel Mutual LIC	150	21,299	275,636	M	89	86
Guarantee Mutual Life Co	250	46,760	537,303	M	80	78
Guardian LIC of America	2,000	370,850	4,168,497	M	74	75
Gulf LIC	250	282,902	1,292,982	S	82	82
Home Beneficial LIC	100	265,136	951,201	S	82	84

Appendix A—Continued

Company Name	Retention Limit	Capital & Surplus	Admit. Assets	Org. Form	Life Insurance Reserve Ratios (%)	
					Year	
					86	87
(in thousands of dollars)						
Home LIC	1,500	128,985	3,541,545	M	75	74
Independent Life & Acc IC	300	126,144	881,539	S	84	82
Indianapolis LIC	500	70,630	730,087	M	89	88
Integrated Resources LIC	250	24,597	303,755	S	86	77
Inter-Ocean IC	300	84,218	257,796	S	75	76
Kansas City LIC	700	148,228	1,323,995	S	85	86
Lafayette LIC	150	31,338	356,344	M	78	77
Liberty LIC	300	76,806	774,403	S	81	86
LIC of Virginia	600	201,610	2,794,075	S	71	71
Maccabees Mutual LIC	200	37,707	640,865	M	75	78
Massachusetts General LIC	350	40,004	327,345	S	90	94
Midwestern United LIC	750	54,653	266,773	S	82	84
Monumental LIC	200	73,649	678,682	S	87	87
Mutual LIC of NY	3,000	515,446	13,976,387	M	80	81
Mutual Savings LIC	80	10,055	228,304	S	85	82
Mutual Trust LIC	300	39,555	400,948	M	88	86
National Benefit LIC(NY)	300	57,530	1,618,449	S	94	96
National LIC(Vt)	3,000	149,427	3,590,887	M	77	77
New Jersey LIC	100	9,251	175,549	S	99	99
New York LIC	20,000	1,854,107	31,843,651	M	76	74
North Carlina Mutual LIC	100	18,430	216,357	M	98	97
Northwestern Mutual LIC	10,000	1,043,239	22,602,895	M	87	88
Old American IC	100	30,975	164,728	S	88	87
Old Line LIC of America	750	127,135	582,886	S	74	79
Phoenix Mutual LIC	2,500	227,564	5,200,524	M	87	87
Provident Mutual LIC	1,000	128,523	2,636,039	M	72	71
Reliable LIC	75	45,807	343,658	S	94	90
Rural Security LIC	250	18,820	156,246	S	86	87
Security-Connecticut LIC	500	121,155	619,006	S	96	96
Security Life of Denver	750	220,222	916,309	S	83	86
Security Mutual LIC	150	22,661	224,337	M	80	80
Security Mutual LIC of NY	275	27,284	640,532	M	73	73
Southern Farm Bureau LIC	200	138,735	1,454,692	S	94	93
Southern Life & Health IC	100	41,166	594,247	S	92	92
Southern LIC	100	24,687	195,733	S	83	83
Southland LIC	200	147,258	963,079	S	92	92
Sovereign LIC of Cal	250	28,819	187,385	S	98	99
Standard LIC	70	20,476	116,899	S	83	86
State LIC	100	16,071	169,171	M	80	87
Union LIC	150	17,903	137,329	S	87	89
Union National LIC	60	49,333	173,177	S	78	80
United Family LIC	100	30,037	273,274	S	89	88
United IC of America	250	995,053	2,133,095	S	90	90
United Investors LIC	500	118,249	280,996	S	74	76
United Services LIC	300	66,475	562,671	S	97	96
Veterans LIC	200	38,134	164,775	S	73	76
Victory LIC	100	11,332	165,700	S	81	74
Western & Southern LIC	600	541,264	3,309,102	M	95	95
Woodmen Accident & Life	200	38,451	373,885	M	77	76

Source: Best's Insurance Reports: Life/Health, 1987-1988.

