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Joseph M. Belth
Indiana University

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Life Insurance Price Measurement

BY JOSEPH M. BELTH*

It is extremely difficult for life insurance buyers to secure the kind of price information they need to make intelligent purchase decisions. The purposes of this article are to examine the distinction between "premium" and "price" in the context of life insurance, to describe briefly two methods by which life insurance prices may be measured, and to present the results of applying the two methods to certain policy data.

The article is organized in four parts. Section I describes the level-price method, Section II describes the benefits-premiums method, Section III shows the results of applying the two methods to certain policies issued by fifteen major companies, and Section IV contains the author's conclusions.

I. THE LEVEL-PRICE METHOD

A. Introduction

The premium for a life insurance policy is the periodic amount needed to provide a combination of protection and savings for the policyholder. In other words, the different types of life insurance policies may be viewed as different combinations of protection and savings. Even term insurance fits this statement, since it may be viewed as a type of policy that contains little or no savings.

In contrast, the word "price," as it is used in this article, refers to the price of the protection element alone. In order to arrive at the price of the protection in a policy, it is necessary to perform

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* Professor of Insurance, Graduate School of Business, Indiana University. The assistance of S. Travis Pritchett and the comments submitted by several actuaries in response to a preliminary draft of the article are gratefully acknowledged. The author, however, assumes sole responsibility for the views expressed in the article and for any errors that may remain. The computations were performed on the CDC 3600 in Indiana University's Research Computing Center.

certain calculations that separate the protection element of the policy from the savings element, at least in a theoretical sense. Also, if the policy is participating, the so-called dividends must be taken into consideration in computing the price of the protection.

The process of computing the price of the protection element of a life insurance policy involves the making of various assumptions. For that reason, no single price figure can be established as *the* price; rather, any price figure that is determined must be accompanied by a statement concerning the assumptions used in computing that figure.

The nature of a life insurance price figure may be illustrated by an analogy. Assume that an individual is purchasing a package AB that consists of an item A and an item B. Even if the price of the package AB is given, no single figure can be established as the price of either A or B alone. In order to calculate the price of A, it is necessary to make an assumption about the price of B, and vice versa. Thus, any figure established as the price of A must be accompanied by a statement about the assumed price of B, and vice versa.

In life insurance, the two parts of the package are protection and savings, and any figure established as the price of the protection must be accompanied by a statement about the assumed rate of return on the savings element. Conversely, it is possible to make a statement about the rate of return on the savings element only if an assumption is made about the price of the protection. In this section of the article, an assumption is made concerning the net interest rate at which the savings element could be invested by the policyholder in an alternate savings medium with safety comparable to that found in life insurance. Price data are then developed on the basis of that assumption.

One approach to life insurance price measurement is the level-price method,¹ which consists of two stages. The first is the

¹ Numerous methods of life insurance price measurement have been developed. The traditional method, which is often referred to as the "net cost method," is the most widely used. Under the traditional method, the cash value at the end of some arbitrarily determined period such as twenty years and the sum of the dividends payable during the period are subtracted from the sum of the premiums payable during the period. The resulting figure is then divided by the number of years in the period. The traditional method has the important attribute of simplicity, but the combined effect of ignoring certain important

(Continued on next page)

calculation of yearly prices per \$1,000 of protection, and the second is the calculation of level prices per \$1,000 of protection.

B. Yearly Prices

In the calculation of the yearly prices per \$1,000 of protection, each year in the period of analysis is treated as a separate entity. To compute a price figure for a given year, five items are considered—the premium, the interest that the policyholder assumes he would earn if the savings element of the policy were invested elsewhere with safety comparable to that found in life insurance, the amount by which the savings element changes in size, the dividend (if any), and the amount of actual protection in effect.

The calculation of yearly prices per \$1,000 of protection may be illustrated by the computation for the sixth year of a \$10,000 participating straight life policy issued at age 35. The data pertain to policies issued in 1968 by The Northwestern Mutual Life Insurance Company, which graciously furnished the data to the author. The annual premium is \$238.90 (including the charge for the waiver-of-premium clause), the cash value at the end of the fifth policy year is \$745.50, the cash value at the end of the sixth policy year is \$940.70, and the dividend payable at the end of the sixth policy year (according to the Company's 1968 dividend scale) is \$53.50. It is assumed in the price calculations that the policyholder would earn a net interest rate of 4 percent if the savings element of the policy were invested elsewhere. Under these assumptions, the three steps in the calculation of the \$3.29 yearly price per \$1,000 of protection in the sixth policy year are shown in Table 1.²

The cash values, annual dividends, and yearly prices per \$1,000 of protection for each of the first fifty years of the illustrative policy are shown in columns 3, 4, and 5 in Table 2. Three points should be noted about the price figures. First, the price per \$1,000 of protection in the first year is high relative to the corresponding figures for the other early policy years. This is a

(Footnote continued from preceding page)

factors impairs its reliability. For a detailed discussion of the traditional method, as well as a discussion of its shortcomings, see J. BELTH, *THE RETAIL PRICE STRUCTURE IN AMERICAN LIFE INSURANCE* 7-10, 21-31 (1966) [hereinafter cited as *RETAIL PRICE STRUCTURE*]. For a brief discussion of several other methods of life insurance price measurement, see *id.* at 10-20.

² For a detailed description of the yearly-price calculations, see *id.* at 33-38.

Table 1

Calculation of Yearly Price per \$1,000 of Protection in
Sixth Year of Illustrative Policy, Assuming 4 Percent Interest

1. Price of protection in sixth year:

Cash value at end of fifth year	\$ 745.50
Add premium for sixth year	238.90
Total "investment" at beginning of sixth year	<u>\$ 984.40</u>
Add 4 percent interest	39.38
Total "investment" at end of sixth year	<u>\$ 1,023.78</u>
Subtract cash value at end of sixth year	<u>940.70</u>
	\$ 83.08
Subtract dividend at end of sixth year	<u>53.50</u>
Price of protection in sixth year	\$ 29.58

2. Average amount of protection in sixth year:

Face amount at beginning of sixth year	\$10,000.00
Subtract "investment" at beginning of sixth year	<u>984.40</u>
Amount of protection at beginning of sixth year	\$ 9,015.60
Face amount at end of sixth year	\$10,000.00
Subtract "investment" at end of sixth year	<u>1,023.78</u>
Amount of protection at end of sixth year	\$ 8,976.22
Average amount of protection in sixth year	\$ 8,995.91

3. Price per \$1,000 of protection in sixth year:

Price of protection in sixth year	\$ 29.58
Divide by average amount of protection in sixth year, expressed in thousands of dollars	<u>8.99591</u>
Price per \$1,000 of protection in sixth year	\$ 3.29

reflection of the "front-end load," which is typical of cash-value life insurance policies.

Second, after the first year, the trend in the yearly prices per \$1,000 of protection is upward. Indeed, the shape of the yearly-price curve resembles a mortality-rate curve. This illustrates the point that the price per \$1,000 of life insurance protection tends to increase with increasing age not only in the case of term policies, but also in the case of level-premium, cash-value policies.

Third, the first twenty-five "yearly prices per \$1,000 of protection" reflect not only the price of the life insurance protection but also the price of the disability protection provided by the waiver-of-premium clause. The reason for including the charge for the waiver-of-premium clause is discussed in the third section of the article.

C. Level Prices

For some purposes, the yearly price figures are sufficient. In many situations, however, it is desirable to reduce a series of

unequal yearly figures to a "level price" per \$1,000 of protection.

The calculation of the level price may be illustrated by reference to the yearly prices per \$1,000 of protection shown in Table 2. It is improper for several reasons to add the fifty figures together and divide by fifty. First, since there are time differences among the figures, interest must be recognized once again. Second, since

Table 2

Policy Data and Yearly Prices for Illustrative \$10,000
Participating Straight Life Policy Issued in 1968 to Standard
Males Aged 35, and Mortality and Lapse Assumptions Used
in this Article

Annual premium: \$238.90 for first 25 years, and \$234.80 thereafter
Assumed interest rate: 4 percent

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Policy Year	Attained Age	Cash Value ^a	Annual Dividend ^a	Yearly Prices ^b	Mortality Rate ^c	Lapse Rate ^c
1	35	\$ 0.00	\$ 3.43	\$21.95	.00140	.0700
2	36	17.94	3.69	3.30	.00149	.0500
3	37	36.47	3.97	3.20	.00160	.0350
4	38	55.34	4.27	3.37	.00175	.0300
5	39	74.55	4.80	3.32	.00191	.0275
6	40	94.07	5.35	3.29	.00212	.0250
7	41	113.90	5.91	3.26	.00236	.0225
8	42	134.04	6.47	3.25	.00266	.0200
9	43	154.49	7.02	3.26	.00302	.0180
10	44	173.24	7.58	5.74	.00345	.0170
11	45	192.29	8.13	5.75	.00396	.0160
12	46	211.63	8.69	5.78	.00451	.0155
13	47	231.24	9.25	5.86	.00509	.0150
14	48	251.12	9.80	5.97	.00571	.0145
15	49	271.23	10.14	6.45	.00634	.0140
16	50	291.58	10.48	6.96	.00694	.0135
17	51	312.15	10.82	7.55	.00756	.0130
18	52	332.94	11.16	8.19	.00832	.0125
19	53	353.93	11.50	8.92	.00920	.0120
20	54	375.14	11.84	9.69	.01009	.0115
21	55	393.07	15.63	10.61	.01100	.0110
22	56	411.04	15.94	11.59	.01206	.0105
23	57	429.01	16.25	12.70	.01326	.0100
24	58	446.96	16.57	13.91	.01460	.0100
25	59	464.86	16.89	15.27	.01606	.0100
26	60	482.69	17.21	15.89	.01769	.0100
27	61	500.43	17.54	17.46	.01955	.0106
28	62	518.04	17.88	19.21	.02161	.0111
29	63	535.51	18.21	21.13	.02375	.0116
30	64	552.80	18.54	23.29	.02583	.0121

(Table 2 continued on next page)

(Table 2 continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
<u>Policy Year</u>	<u>Attained Age</u>	<u>Cash Value^a</u>	<u>Annual Dividend^a</u>	<u>Yearly Prices^b</u>	<u>Mortality Rate^c</u>	<u>Lapse Rate^c</u>
31	65	\$569.88	\$18.86	\$25.69	.02799	.0125
32	66	586.70	19.19	28.38	.03034	.0130
33	67	603.22	19.50	31.43	.03304	.0135
34	68	619.39	19.81	34.84	.03592	.0140
35	69	635.17	20.12	38.62	.03927	.0145
36	70	650.58	20.41	42.68	.04290	.0150
37	71	665.64	20.69	47.02	.04645	.0155
38	72	680.42	20.96	51.51	.04996	.0160
39	73	694.98	21.22	56.22	.05372	.0165
40	74	709.37	21.46	61.27	.05816	.0170
41	75	723.60	21.69	66.83	.06336	.0180
42	76	737.62	21.90	73.30	.06904	.0190
43	77	751.40	22.09	80.71	.07509	.0200
44	78	764.84	22.27	89.52	.08198	.0210
45	79	777.91	22.44	99.55	.08968	.0220
46	80	790.63	22.59	110.78	.09768	.0240
47	81	803.03	22.73	123.31	.10542	.0260
48	82	815.24	22.85	136.85	.11340	.0280
49	83	827.38	22.95	151.82	.12290	.0300
50	84	839.66	23.04	167.98	.13500	.0650

^aPer \$1,000 of face amount.

^bYearly prices per \$1,000 of protection, assuming 4 percent interest.

^cSee footnote 3 for an explanation of the sources of these mortality and lapse rates.

the policyholder may die or discontinue the policy before incurring the various yearly prices, probabilities of survival and continuation should be used in the leveling process. Third, the amount of actual protection frequently changes, and the differences should be taken into account through a procedure that is analogous to the calculation of a weighted average. When the fifty yearly prices per \$1,000 of protection are "leveled" using 4 percent interest, one particular set of mortality and lapse assumptions,³ and the appropriate amount weights, the resulting

³ The mortality and lapse rates used in the calculations are shown in columns 6 and 7 in Table 2. The mortality rates are those in the 1957-60 ultimate basic table for male lives. See 1962 *Reports of Mortality and Morbidity Experience*, 14 TRANSACTIONS OF THE SOCIETY OF ACTUARIES 48 (1962). The lapse rates are those in Moorhead's Table R. See Moorhead, *The Construction of Persistency Tables*, 12 TRANSACTIONS OF THE SOCIETY OF ACTUARIES 553 (1960). Table R shows lapse rates only for the first thirty policy years, so the table has been arbitrarily extended by the author for the purpose of this article.

fifty-year level price per \$1,000 of protection is \$8.69.⁴ When only the first twenty yearly prices per \$1,000 of protection are taken into account, the twenty-year level price per \$1,000 of protection is \$6.41. As indicated earlier, the price figures reflect the price of the disability protection provided by the waiver-of-premium clause as well as the life insurance protection.

Although the arithmetic involved in level-price calculations may seem to be an extremely time-consuming task, the arithmetic presents no problem when a computer is used. For example, the computer used by the author handles a problem of the type illustrated in Table 2 in about one second.

II. THE BENEFITS-PREMIUMS METHOD

An alternative approach to the evaluation of a life insurance policy is to (1) compute the present value of the benefits under the policy, (2) compute the present value of the premiums for the policy, and (3) examine the relationship between the two present-value figures. In this section of the article, the results of this approach are shown, using the data for the illustrative policy for which price calculations are shown in the first section of the article.

A. Elements of the Relationship

Four elements enter into the relationship between benefits and premiums—the protection element, the savings element, the premiums, and, in the case of participating policies, the dividends. The present value of the protection for the period of analysis is the sum of the respective present values of the protection for the individual policy years. Each of these present values, in turn, is the product of the amount of protection in the year and the probability of death in that year according to the assumed mortality table, multiplied by the probability of the policyholder's surviving and continuing the policy from its inception to the beginning of that year, and multiplied by the appropriate discount factor. For the illustrative policy, and based on the same interest, mortality, and lapse assumptions mentioned in the first section of

⁴ For a detailed description of the level-price calculations, see RETAIL PRICE STRUCTURE, *supra* note 1, at 38-43.

the article, the present value of the protection for the fifty-year period is \$636.26.⁵

The present value of the savings element for the period of analysis is the sum of the respective present values of the savings increments for the individual policy years. Each of these present values, in turn, is the savings increment for the year, multiplied by the probability of the policyholder's surviving and continuing the policy to the beginning of that year, and multiplied by the appropriate discount factor. For the illustrative policy, and based on the above-mentioned assumptions, the present value of the savings increments for the fifty-year period is \$1,192.31.

The present value of the premiums for the period of analysis is the sum of the respective present values of the premiums for the individual policy years. Each of these present values, in turn, is the premium for the year, multiplied by the probability of the policyholder's surviving and continuing the policy to the beginning of that year, and multiplied by the appropriate discount factor. For the illustrative policy, and based on the above-mentioned assumptions, the present value of the premiums (including the charge for the waiver-of-premium clause) for the fifty-year period is \$3,333.07.

The present value of the dividends for the period of analysis is the sum of the respective present values of the dividends for the individual policy years. Each of these present values, in turn, is the dividend for the year, multiplied by the probability of the policyholder's surviving and continuing the policy to the beginning of that year, and multiplied by the appropriate discount factor. For the illustrative policy, and based on the above-mentioned assumptions, the present value of the dividends for the fifty-year period is \$1,237.25.

B. Ratio of Benefits to Premiums

One of the ways in which to construct a ratio of benefits to premiums is to treat the present value of the protection and the present value of the savings increments as "benefits" under the

⁵ This figure represents the present value of the life insurance protection alone. Since the premiums include the charge for the waiver-of-premium clause, the "present value of the protection" should be increased by the present value of the disability protection provided by the waiver-of-premium clause. However, such a refinement has not been made in this article.

policy, and to treat the present value of the premiums less the present value of the dividends as the "premiums" for the policy.⁶ Using this approach, the ratio of benefits to premiums for the fifty-year period of the illustrative policy is calculated as follows:

$$\text{Ratio} = \frac{\$ 636.26 + \$1,192.31}{\$3,333.07 - \$1,237.25} = .872.$$

When the calculations are carried out only for the first twenty policy years, the present value of the protection is \$290.14, the present value of the savings increments is \$1,316.22, the present value of the premiums (including the charge for the waiver-of-premium clause) is \$2,573.67, and the present value of the dividends is \$690.66. Thus, the twenty-year ratio of benefits to premiums for the illustrative policy is .853.

C. *An Absolute Measure*

An absolute measure of the relationship between benefits and premiums is simply the difference between these two items. Thus, if E is designated as the absolute measure, then E is equal to the present value of the premiums minus the present value of the benefits. More specifically, E is equal to the present value of the premiums minus the present value of the dividends minus the present value of the protection minus the present value of the savings increments. Using this approach, the value of E for the fifty-year period of the illustrative policy is calculated as follows:

$$E = \$3,333.07 - \$1,237.25 - \$636.26 - \$1,192.31 = \$267.26.$$

When only the first twenty policy years are considered, the twenty-year E-value for the illustrative policy is \$276.64.⁷

A comment is in order concerning the E-value. The letter "E" was selected by the author to represent the "excess" of the

⁶ For a discussion of various other ratios of benefits to premiums, as well as a detailed description of the calculations referred to in this section of the article, see Belth, *The Relationship Between Benefits and Premiums in Life Insurance*, 36 J. OF RISK & INS. 19-39 (1969).

⁷ All of the dollar figures shown in this section of the article are accurate to the nearest cent. Thus, errors produced by rounding are the cause of the one-cent discrepancies between the E-values for the illustrative policy and the values of the elements that enter into the computation of the E-values.

present value of the premiums over the present value of the benefits. The E-value may also be viewed as the present value of the "expense" (including contingency margins and profit) factor of the policy from the buyer's point of view.

III. SELECTED DATA FOR MAJOR COMPANIES

A. The Companies

The data in this section of the article were computed from information gathered by the author in late 1968 and early 1969. To illustrate the price measurement techniques described earlier, the author assembled data for certain participating policies issued by United States life insurance companies with admitted assets in excess of \$2 billion as of December 31, 1967. The figure of \$2 billion was selected so as to include a reasonable number of companies—not too few, and at the same time not so many as to make the problem of gathering data unwieldy.

Fifteen United States companies in this size category issue participating policies.⁸ The combined admitted assets of these fifteen companies were equal to about 65 percent of the admitted assets of all United States life insurance companies at the end of 1967.⁹

B. The Policies

The policies selected for analysis were the \$10,000 participating straight life (ordinary life) policies issued to standard males aged 35 in 1968 and in 1948. If a company did not issue

⁸ Listed alphabetically, the full names of the companies and their main home office locations are as follows: Aetna Life Insurance Company, Hartford; Connecticut General Life Insurance Company, Hartford; Connecticut Mutual Life Insurance Company, Hartford; The Equitable Life Assurance Society of the United States, New York; John Hancock Mutual Life Insurance Company, Boston; The Lincoln National Life Insurance Company, Fort Wayne; Massachusetts Mutual Life Insurance Company, Springfield; Metropolitan Life Insurance Company, New York; The Mutual Benefit Life Insurance Company, Newark; The Mutual Life Insurance Company of New York, New York; New England Mutual Life Insurance Company, Boston; New York Life Insurance Company, New York; The Northwestern Mutual Life Insurance Company, Milwaukee; The Penn Mutual Life Insurance Company, Philadelphia; and The Prudential Insurance Company of America, Newark.

⁹ The company asset figures for this calculation were taken from A. M. Best Co., *BEST'S FLITCRAFT COMPEND* (1968). The industry asset figure was taken from Institute of Life Insurance, *LIFE INSURANCE FACT BOOK 66* (1968).

straight life policies, the form closest to straight life was used.¹⁰ The participating straight life form was selected for analysis because it is a fundamental and widely used form of life insurance. Age 35 was used because it is approximately in the middle of the main insurance-buying ages and is the age for which published policy data are the most widely available. The face amount of \$10,000 was selected because it is a round figure that represents a commonly purchased policy size. The year 1968 was chosen as the latest year for which data are currently available, and 1948 was selected because it is the most recent year for which reasonably extensive data on dividend histories are published.

In 1948, some of the companies issued a policy with a minimum amount of \$5,000. If only the price figures for the \$5,000-minimum policy were shown, it was felt that such a presentation would be unfair to those companies that did not offer \$5,000-minimum policies. On the other hand, if only the price figures for \$1,000-minimum policies were shown for companies offering \$5,000-minimum policies, it was felt that such a presentation would be unfair to those companies offering \$5,000-minimum policies. For companies issuing both types of policies, therefore, data were assembled for the \$5,000-minimum policies as well as for the \$1,000-minimum policies, and the results are shown for both types of policies.¹¹

¹⁰ The names of the 1968 policies studied, and their annual premiums (including the charge for the waiver-of-premium clause), are as follows: Aetna Life, whole life, \$246.20; Connecticut General, life paid up at age 85, \$230.10; Connecticut Mutual, whole life, \$240.40; Equitable of New York, adjustable whole life, \$239; John Hancock, preferred whole life, \$240.80; Lincoln National, ordinary life, \$242; Massachusetts Mutual, convertible life, \$242.90; Metropolitan Life, life paid up at age 90, \$248.10 for age 35, and \$240.10 for age 34; Mutual Benefit, ordinary life, \$246; Mutual of New York, whole life, \$234.10; New England Mutual, ordinary life, \$238.50; New York Life, whole life, \$238.60; Northwestern Mutual, life paid up at age 90, \$238.90; Penn Mutual, whole life, \$241.60; Prudential, life paid up at age 85, \$253.80 for age 35 and \$245.70 for age 34.

¹¹ The names of the 1948 policies studied, and their annual premiums (including the charge for the waiver-of-premium clause), are as follows: Aetna Life, ordinary life, \$292.50; Connecticut General, ordinary life, \$289.40; Connecticut Mutual, ordinary life, \$293; Equitable of New York, ordinary life, \$308.20; John Hancock, preferred whole life (minimum \$5,000), \$267.10, and life paid up at age 85, \$292.20; Lincoln National, ordinary life, \$287.50; Massachusetts Mutual, ordinary life, \$290.10; Metropolitan Life, whole life (minimum \$5,000), \$250, and life paid up at age 85, \$276.90; Mutual Benefit, ordinary life, \$292; Mutual of New York, preferred modified life (minimum \$5,000), \$245.70 for the first three years and \$286.80 thereafter, and life paid up at age 85, \$308.10; New England Mutual, ordinary life (minimum \$5,000), \$274.80, and life paid up at age 85, \$288.90; New York Life, ordinary life (minimum \$5,000), \$295.30, and

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The waiver-of-premium clause, under which premiums are waived during certain types of serious disabilities, usually may be included in life insurance policies for a specified additional premium. Some companies, however, include the clause automatically with no specific extra charge. For example, among the companies in this study, the clause usually is included automatically in policies currently issued by Metropolitan Life, Mutual of New York, and Prudential, and usually may be included for a specific extra charge in the policies of the other twelve companies. To achieve comparability among the companies in this respect, one approach is to make a downward adjustment in the premium rates of those companies that usually include the clause automatically. Another approach is to add the cost of the clause to the premium rates of the companies that include it for a specific extra charge. Since most policies presumably are issued with the clause, even in those companies that have a specific charge for it, the latter approach is used in this article.¹²

C. The Policy Data

In order to perform the kind of price calculations described earlier in this article, it is necessary to have the premiums, cash values, and dividends (if any) for each policy year in the period of analysis. It was decided to limit the analysis of each policy to twenty years, because reasonably complete published policy data generally are available only for that period. This is an important shortcoming of the price figures shown in this section of the article, and it must be emphasized that the decision to limit the analysis to twenty years was based solely on the policy data problem. Once the computations are mechanized, the arithmetic involved in

(Footnote continued from preceding page)

life paid up at age 85, \$309.60; Northwestern Mutual, ordinary life, \$283.80; Penn Mutual, ordinary life, \$298.30; Prudential, modified 3 (minimum \$5,000), \$231.30 for the first three years and \$272.10 thereafter, and life paid up at age 85, \$287.50.

¹² The decision to include the cost of the waiver-of-premium clause for all of the companies produced a data problem. In connection with their 1948 issues, four companies—Equitable of New York, Mutual Benefit, New York Life, and Penn Mutual—paid larger dividends on policies with the clause than on policies without it. In addition, one of these companies—Mutual Benefit—paid small cash surrender values on its waiver-of-premium clause, which in 1948 was issued as a supplementary contract. The dividends and cash values shown in the trade publications for these companies are those paid on policies without the waiver-of-premium clause. The companies furnished the necessary additional data to the author, and the results based on dividend histories for 1948 issues were adjusted to reflect these extra dividends and cash values.

longer periods of analysis—such as in the fifty-year analyses illustrated earlier—presents no problem whatever.

It was also decided to rely primarily on published policy data. Thus, all of the available published data to be used in the study were assembled.¹³ In almost all of the fifty-nine sets of policy data, some of the figures were missing. For example, the cash values or dividends might be shown only for policy years 1-5, 10, 15, and 20. In all except five cases, it was felt that the missing data could be estimated with reasonable accuracy.

However, to achieve as much accuracy as possible, the author decided to request the assistance of the companies. Each company was sent the data that had been assembled relative to the company. In the cover letter, the author explained the nature of the article, indicated that the price information was to be associated with specific companies by name, and asked each company to verify the figures already assembled and to insert the missing figures. Fourteen of the fifteen companies complied with the request.¹⁴

A preliminary draft of the article was distributed to the fifteen companies by certified mail on February 11, 1969. Included in the mailing to each company were an explanatory memorandum, the computer output from which the results for the company had been taken, and a copy of two earlier articles showing the

¹³ The publications consulted were the 1948 and 1968 editions of National Underwriter Co., *THE UNIQUE MANUAL*; A.M. Best Co., *BEST'S FLITCRAFT COMPEND*, and National Underwriter Co., *DIAMOND LIFE BULLETINS*.

¹⁴ The other company—Lincoln National—declined to furnish the information requested. An official of the company indicated in a letter to the author that the reason for the declination was as follows: "We do not agree in principle that your paper, a scholarly paper in a scholarly journal, should include the costs for individually identified companies." A comment is in order concerning the extent of the possible error in the Lincoln National price figures, which are based in part on estimates of cash values and dividends. Before the assembled data were sent to the respective companies, the author estimated the missing figures in all of the sets of data for which reasonable estimates could be made. In making the estimates, the author followed exactly the same procedures for all of the policies. Price figures were then computed on the basis of the published information supplemented by the estimates. After the material was received from the fourteen companies that complied with the author's request for assistance, the price figures for those companies were recomputed on the basis of the exact policy data. In the case of the fourteen 1968 policies, the author's estimates produced errors in the level prices (see Table 3) of five cents on one of the policies, two cents on two of the policies, one cent on four of the policies, and zero cents on the other seven policies. In the case of the nineteen 1948 policies on which sufficient published data were available on dividend illustrations, the author's estimates produced errors in the level prices of seven cents on one of the policies, four cents on one of the policies, three cents on one of the policies, two cents on one of the policies, one cent on two of the policies, and zero cents on the other thirteen policies. Thus, the average error in the level prices produced by the author's estimates was about one cent.

formulas needed in order to doublecheck the results of the calculations. In the explanatory memorandum, the author emphasized that he was operating under a publication deadline and that comments had to be received by March 10. Thus, after allowance for time in the mail, the companies had three weeks in which to respond.

Seven of the companies made no response whatever to the distribution of the preliminary draft. Of the eight companies that responded, four indicated that they had checked at least some of the figures and found them to be correct; the other four companies that responded made no comment on the figures. One company indicated that some of the information it had supplied previously was slightly in error; the corrected data were furnished by the company and the price figures were recalculated. With regard to the content of the article other than the price figures, three companies made a number of observations, some of which were reflected in the revised draft of the article. Two companies raised questions about the desirability of associating the price figures with specific companies identified by name.

D. The Level Prices

The twenty-year level prices per \$1,000 of protection for the various policies included in the study are shown in Table 3. The same mortality and lapse assumptions were used in the calculations as were used in the illustrations in the first two sections of the article. For the policies issued in 1968, an interest rate of 4 percent was used. This rate was selected to represent the rate of interest that a policyholder might earn, net of federal income tax, if the savings element of his life insurance were invested in a fixed-dollar savings medium with safety comparable to that found in life insurance. Since interest rates generally have followed an increasing trend during the period from 1948 to 1968, an interest rate of 3 percent was used in the calculations for the policies issued in 1948.

Among the policies issued in 1968, the prices based on dividend illustrations range from \$6.41 to \$10.06, with a mean of \$8.57 and a standard deviation of \$1.01. Among the policies issued in 1948, the prices based on the companies' 1948 dividend illustrations range from \$8.87 to \$15.05, with a mean of \$12.46 and a

Table 3

Level Prices for \$10,000 Participating Straight Life Policies Issued by Fifteen Major Companies to Standard Males Aged 35 in 1968 and 1948

Company	Level Prices ^a		
	1968 Illustration	1948 Illustration	1948 History
Aetna Life	\$ 9.86 ^b	\$14.00	\$10.74
Connecticut General	9.17	13.38	10.82
Connecticut Mutual	6.98	11.64	8.61
Equitable of New York	8.52 ^b	13.47	11.93 ^b
John Hancock	8.82 ^b	{ 10.68 ^c 13.69 }	{ 8.35 ^{bc} 11.27 ^b }
Lincoln National	9.10 ^d	13.29 ^d	(e)
Massachusetts Mutual	7.71	12.69	9.43
Metropolitan Life	10.06 ^{bf}	{ 9.69 ^{bc} 12.07 ^b }	{ 8.99 ^{bc} 11.51 ^b }
Mutual Benefit	8.21	12.89	10.23
Mutual of New York	8.98 ^b	{ 11.28 ^c 13.41 }	{ 9.28 ^{bc} 11.53 ^b }
New England Mutual	8.05 ^b	{ 11.12 ^c 12.76 }	{ 8.63 ^{bc} 9.86 ^b }
New York Life	8.13 ^b	{ 13.98 ^{bc} 15.05 ^b }	{ 9.86 ^{bc} 11.99 ^b }
Northwestern Mutual	6.41	8.87	7.48
Penn Mutual	8.56	13.38	10.67
Prudential	10.04 ^{bf}	{ 10.90 ^c 13.47 }	{ 9.22 ^{bc} 12.59 ^b }

^aTwenty-year level prices per \$1,000 of protection, using 1957-60 ultimate basic male mortality rates, Moorhead's R lapse rates, 4 percent interest for the policies issued in 1968, and 3 percent interest for the policies issued in 1948.

^bTerminal dividends included in calculations. See text for explanation.

^cMinimum policy \$5,000. See text for explanation.

^dBased in part on estimates of cash values and dividends. Policy data used in calculations not verified by company.

^eSufficient policy data not available.

^fResults adjusted downward to compensate for use of age last birthday. See text for explanation.

Note: Premium rates used in the calculations for this table include the cost of the waiver-of-premium provision.

standard deviation of \$1.52. Among the policies issued in 1948, the prices based on dividend histories range from \$7.48 to \$12.59, with a mean of \$10.15 and a standard deviation of \$1.37.

Four aspects of the calculations for Table 3 should be discussed. First, all but two of the companies included in the study classify an applicant by reference to his age at his birthday nearest

to the policy's date of issue. Thus, if the applicants a company classifies as aged 35 were evenly distributed, the applicants would range from age $34\frac{1}{2}$ to age $35\frac{1}{2}$ with an average of exactly 35. However, two of the companies—Metropolitan Life and the Prudential—currently classify an applicant by reference to his age at his last birthday. Thus, if the applicants classified by these two companies as aged 35 were evenly distributed, the applicants would range from age 35 to age 36, with an average of $35\frac{1}{2}$. To achieve reasonable comparability among the companies in this regard, the author assembled data for both age 34 and age 35 in the case of Metropolitan Life and Prudential, and then used in Table 3 the average of the two level-price figures.

Second, terminal dividends are reflected in the calculations. At the present time, terminal dividends generally are payable either on death (when they are sometimes called "mortality" dividends) or on surrender (when they are sometimes called "surrender" dividends). Mortuary dividends are treated in the calculations as additions to the face amount. Surrender dividends are treated in the calculations as additions to the annual dividends, but only to the extent of the product of the surrender dividend and the probability of surrender in the policy year in question, as determined from the assumed lapse table.¹⁵

¹⁵ There appears to be general agreement concerning the appropriateness of the above-mentioned treatment of mortality dividends. On the surrender dividends, however, there are some who feel that the more appropriate treatment is to view the surrender dividend in its entirety as an addition to the surrender value in the policy year in question. The latter treatment, when the period of analysis is limited to twenty years, tends to produce lower price figures than the approach used by the author. For example, among the 1968 policies in Table 3, eight provide for surrender dividends. If the alternative treatment had been used in the calculations, the price figures for the eight policies would have been reduced by amounts ranging from thirty cents to seventy-nine cents. In terms of the price rankings, in the case of the 1968 policies, the alternative treatment would have improved the positions of John Hancock and New York Life by two ranks, the positions of Equitable of New York, Metropolitan Life, and Mutual of New York by one rank, the position of Aetna Life would have remained unchanged, and the position of Prudential would have been worsened by one rank. Among the companies that do not pay surrender dividends, the alternative treatment would have worsened the positions of Mutual Benefit and Penn Mutual by two ranks, the position of Massachusetts Mutual by one rank, and the positions of the other four companies would have remained unchanged. Neither of the treatments of surrender dividends is completely satisfactory when the period of analysis is limited to twenty years. The treatment used by the author in the calculations for Table 3 tends to favor slightly companies that do not pay surrender dividends in relation to some of the companies that pay such dividends. On the other hand, the alternative treatment tends to favor slightly some of the companies that pay surrender dividends in relation to companies that do not pay such dividends. Thus, the analyst is faced with a dilemma. In the opinion of the author, the

(Continued on next page)

Third, in companies that include the waiver-of-premium clause for a specific extra charge, the charge usually drops off when the policyholder attains age 60 because the benefit generally terminates at that point if the policyholder is not disabled. In companies that include the clause automatically, however, the premium for a straight life policy usually remains unchanged, so that the cost of the clause is effectively spread over the life of the policy even though the benefit may terminate at age 60. Thus, when the price analysis is limited to twenty years, as in this section of the article, the results tend to favor slightly those companies that include the cost of the waiver-of-premium clause automatically. No adjustment has been made in this article to compensate for this discrepancy. However, the author estimates that such an adjustment would result in a reduction of about eleven cents in the 1968 level prices in Table 3 for those companies that make a specific charge for the waiver-of-premium clause.

Fourth, the following minor refinements were not made in the calculations for this article: adjustments to reflect the practice, followed by some companies, of paying at death a pro rata portion of the premium for the period between the date of death and the due date of the next premium; adjustments to reflect the practice, followed by some companies, of paying at death all or a pro rata portion of the annual dividend that would have been paid at the end of the policy year of death; and adjustments to reflect the practice, followed by some companies, of making one or more annual dividends contingent upon payment of the subsequent premium.¹⁶

E. The Ratios

The twenty-year ratios of benefits to premiums for the various policies included in the study are shown in Table 4. The same interest, mortality, and lapse assumptions were used in the cal-

(Footnote continued from preceding page)

primary reason for surrender dividends has been to improve the companies' apparent relative positions under the traditional net cost method, in which surrender dividends are given extremely heavy weight. Under such circumstances, if one group of companies must be favored slightly over another, the author feels that the choice of approach should be made so as to favor those companies that have declined to improve their traditional net costs through the payment of surrender dividends. A thorough discussion of the two treatments of surrender dividends and the nature of the analyst's dilemma in this area is contained in RETAIL PRICE STRUCTURE, *supra* note 1, at 45-55.

¹⁶ For a detailed discussion of these adjustments, see *id.* at 43-44.

culations as were used in the calculation of the level prices in the preceding subsection of the article. Also, the same comments that appear in the preceding subsection concerning various adjustments apply to the calculations for Table 4.

Among the policies issued in 1968, the ratios based on dividend illustrations range from .853 to .715, with a mean of .770 and a

Table 4

Ratios of Benefits to Premiums for \$10,000 Participating
Straight Life Policies Issued by Fifteen Major Companies
to Standard Males Aged 35 in 1968 and 1948

Company	Ratios of Benefits to Premiums ^a		
	1968 Illustration	1948 Illustration	1948 History
Aetna Life . . . . .	.723 ^b	.650	.728
Connecticut General . . . . .	.754	.663	.726
Connecticut Mutual . . . . .	.827	.702	.788
Equitable of New York . . . . .	.769 ^b	.658	.695 ^b
John Hancock . . . . .	.761 ^b	{.729 ^c .658}	{.798 ^{bc} .715 ^b }
Lincoln National . . . . .	.748 ^d	.657 ^d	(e)
Massachusetts Mutual . . . . .	.800	.677	.763
Metropolitan Life . . . . .	.715 ^{bf}	{.757 ^{bc} .696 ^b }	{.778 ^{bc} .709 ^b }
Mutual Benefit . . . . .	.786	.688	.754
Mutual of New York . . . . .	.754 ^b	{.711 ^c .666}	{.767 ^{bc} .710 ^b }
New England Mutual . . . . .	.786 ^b	{.718 ^c .679}	{.790 ^{bc} .754 ^b }
New York Life . . . . .	.779 ^b	{.656 ^{bc} .636 ^b }	{.757 ^{bc} .703 ^b }
Northwestern Mutual . . . . .	.853	.790	.834
Penn Mutual . . . . .	.770	.669	.734
Prudential . . . . .	.718 ^{bf}	{.715 ^c .660}	{.763 ^{bc} .680 ^b }

^a Twenty-year ratios of benefits to premiums, using 1957-60 ultimate basic male mortality rates, Moorhead's R lapse rates, 4 percent interest for the policies issued in 1968, and 3 percent interest for the policies issued in 1948.

^b Terminal dividends included in calculations. See text for explanation.

^c Minimum policy \$5,000. See text for explanation.

^d Based in part on estimates of cash values and dividends. Policy data used in calculations not verified by company.

^e Sufficient policy data not available.

^f Results adjusted downward to compensate for use of age last birthday. See text for explanation.

Note: Premium rates used in the calculations for this table include the cost of the waiver-of-premium provision.

standard deviation of .037. Among the policies issued in 1948, the ratios based on the companies' 1948 dividend illustrations range from .790 to .636, with a mean of .687 and a standard deviation of .038. Among the policies issued in 1948, the ratios based on dividend histories range from .834 to .680, with a mean of .747 and a standard deviation of .039.

F. The E-values

The twenty-year E-values for the various policies included in the study are shown in Table 5. The same interest, mortality, and lapse assumptions were used in the calculations as were used in the calculation of the level prices and ratios in the preceding two subsections of the article. Also, the same comments that appear in the discussion of the data in Table 3 concerning various adjustments apply to the calculation of the E-values.

Among the policies issued in 1968, the E-values based on dividend illustrations range from \$276.64 to \$617.98, with a mean of \$470.32 and a standard deviation of \$93.85. Among the policies issued in 1948, the E-values based on the companies' 1948 dividend illustrations range from \$513.26 to \$1,095.96, with a mean of \$857.14 and a standard deviation of \$143.15. Among the policies issued in 1948, the E-values based on dividend histories range from \$383.85 to \$873.13, with a mean of \$639.97 and a standard deviation of \$129.26.

IV. CONCLUSION

A. A Warning

It is important to note that it is extremely difficult to make broad generalizations about life insurance prices. For that reason, the reader is cautioned against making generalizations from the very limited amount of data presented in this article.

There are numerous reasons for this warning, some of which may be mentioned to illustrate the nature of the problem. First, the figures in Tables 3 through 5 are based on a twenty-year period of analysis, and the relative positions of the companies might be different if a longer period of analysis were used. The reason for terminating the analyses after the twentieth year is the usual unavailability of detailed policy data beyond that point.

Table 5

E-values for \$10,000 Participating Straight Life Policies
 Issued by Fifteen Major Companies to Standard
 Males Aged 35 in 1968 and 1948

Company	E-values ^a		
	1968 Illustration	1948 Illustration	1948 History
Aetna Life	\$588.89 ^b	\$1,005.61	\$697.29
Connecticut General	517.33	946.87	704.95
Connecticut Mutual	326.68	780.13	495.27
Equitable of New York	463.48 ^b	955.55	809.92 ^b
John Hancock	491.57 ^b	{ 692.00 ^c 973.60 }	{ 471.81 ^{bc} 747.69 ^b }
Lincoln National	516.67 ^d	947.50 ^d	(e)
Massachusetts Mutual	390.33	878.21	571.71
Metropolitan Life	617.98 ^{bf}	{ 597.73 ^{bc} 821.37 ^b }	{ 533.63 ^{bc} 772.00 ^b }
Mutual Benefit	430.85	881.42	635.85
Mutual of New York	505.97 ^b	{ 751.37 ^c 945.48 }	{ 562.55 ^{bc} 772.12 ^b }
New England Mutual	422.38 ^b	{ 728.26 ^c 880.32 }	{ 494.31 ^{bc} 608.90 ^b }
New York Life	428.51 ^b	{ 997.85 ^{bc} 1,095.96 ^b }	{ 612.49 ^{bc} 809.81 ^b }
Northwestern Mutual	276.64	513.26	383.85
Penn Mutual	465.86	935.41	682.67
Prudential	611.65 ^{bf}	{ 718.24 ^c 953.78 }	{ 559.41 ^{bc} 873.13 ^b }

^a Twenty-year E-values, using 1957-60 ultimate basic male mortality rates, Moorhead's R lapse rates, 4 percent interest for the policies issued in 1968, and 3 percent interest for the policies issued in 1948.

^b Terminal dividends included in calculations. See text for explanation.

^c Minimum policy \$5,000. See text for explanation.

^d Based in part on estimates of cash values and dividends. Policy data used in calculations not verified by company.

^e Sufficient policy data not available.

^f Results adjusted downward to compensate for use of age last birthday. See text for explanation.

Note: Premium rates used in the calculations for this table include the cost of the waiver-of-premium provision.

Second, two of the three sets of data in each table are based on dividend illustrations, which are neither guarantees nor estimates of future dividends. A dividend illustration represents simply the dividends that a company will pay if it makes no changes in the assumptions entering into the calculation of dividends, but the

fact is that companies frequently change their assumptions as their experience continues to unfold.

Third, the figures in the tables are based on straight life policies issued at age 35. The relative positions of the companies might be somewhat different for other issue ages, and might be substantially different for other policy forms.¹⁷

Fourth, the figures in the tables are based on a single set of interest, mortality, and lapse assumptions. The relative positions of the companies would have been slightly different if other assumptions had been used.¹⁸

Fifth, the figures in the tables are based on face amounts of \$10,000. Because quantity discounts are applied in various ways, the relative positions of the companies may be somewhat different for other face amounts.¹⁹

¹⁷ For discussions of these points, see *id.* at 87-100, 104-21, 135-39.

¹⁸ To illustrate this point, the author ran the level-price calculations for the 1968 policies in Table 3 with certain other assumptions. For example, when 3 percent interest was used instead of 4 percent, and when the mortality and lapse assumptions were left unchanged, the relative positions of two companies—Mutual Benefit and Penn Mutual—were improved by one rank, the relative positions of two companies—Equitable of New York and New York Life—were worsened by one rank, and the relative positions of the other eleven companies remained unchanged. When the 1958 C.S.O. mortality table was used instead of the 1957-60 ultimate basic table for males, and when the other assumptions were left unchanged, the relative positions of all fifteen companies remained unchanged. When Moorhead's Table S lapse rates were used instead of his Table R rates, and when the other assumptions were left unchanged, the relative positions of three companies—Connecticut General, Mutual Benefit, and Prudential—were improved by one rank, the relative positions of three companies—Aetna Life, Lincoln National, and New York Life—were worsened by one rank, and the relative positions of the other nine companies remained unchanged. For a more detailed discussion of this point, see *id.* at 55-62.

¹⁹ For a discussion of this point, see *id.* at 141-51. An example of the problems in this area was mentioned by Daton Gilbert, F.S.A., Senior Vice President of Connecticut Mutual, in a letter to the author dated December 18, 1968:

In recent years most companies have adopted rate structures graded by policy size. Some companies (e.g., Northwestern Mutual) have graded their dividends on prior business by policy size. However, in the Connecticut Mutual our carefully considered concept of equitable treatment of policyholders led to our decision *not* to introduce such grading of dividends. [Emphasis in original.] According to our firm belief, such older business was sold on the assumption of a "flat" cost structure and the dividend basis should continue to reflect this approach. In any comparison of relative costs between older and newer policies, such underlying dividend philosophies should be recognized and interpreted in relation to the policy size distributions for the issue years in question. For example, for our Company the average size policy on 1948 new business was \$5,503. By contrast, the corresponding figure for 1967 was \$14,759. In relation to these facts and to our dividend philosophy on

(Continued on next page)

Sixth, the figures in the tables are based on policies issued in 1948 and in 1968. The relative positions of the companies may be substantially different for other years of issue.²⁰

Seventh, the figures in the tables are applicable only to those who can meet all of the underwriting requirements of the various companies. Some of the policies issued in 1948 were of the "preferred" variety, which were available only to those who could meet underwriting requirements stiffer than those applicable to policies of the "standard" variety. Moreover, companies are likely to differ in their underwriting requirements, so that an applicant who qualifies for standard insurance in one company might qualify only for substandard insurance in another company, and an applicant who is placed in a given substandard classification in

(Footnote continued from preceding page)

older business, comparisons at the \$10,000 level between "costs" on old and new business could be misleading.

A similar point was made by William F. Ward, F.S.A., Executive Vice President of Mutual Benefit, in a letter to the author dated December 30, 1968:

Our premium rates reflect the quantity discount by the banding method. A \$10,000 policy is subject to the same premium rate per \$1,000 as those for amounts ranging from \$7,500 to \$12,499. The rate relates to an average face amount of about \$9,000. As you know, this will place us at some disadvantage for policies of \$10,000 as compared with companies using a policy fee basis or banding running from \$10,000 to \$24,999.

²⁰ For a discussion of this point, see RETAIL PRICE STRUCTURE, *supra* note 1, at 157-64. An example of the problems in this area, as well as the problems inherent in any attempt to classify a company in terms of the relationship between its dividend illustrations and its dividend histories was described by Victor E. Henningsen, F.S.A., Senior Vice President of Northwestern Mutual, in a letter to the author dated December 13, 1968:

The year 1948 falls in a period of decreasing interest rates. As a result particularly of these declines in interest earnings, virtually every company, insofar as I recall at this time, found it necessary to reduce its dividend scale. The Northwestern Mutual held off its reduction perhaps longer than most companies. This of course was helpful to the then existing policyowners because the time was deferred at which net payments (gross premiums less dividends) would increase. We made our reduction in the 1949 dividend scale. This becomes very apparent as one compares the 1948 history and illustrative figures. Of course a policy issued in 1948 did not receive its first dividend until 1949. A comparison of the two sets of figures shows that as a result of our reduction in 1949, the actual dividend payouts on a policy issued in 1948 were lower than the illustrated figures through the first five policy years. Thereafter, as a result mainly of improved interest earnings, the actual dividends exceeded the illustrated figures and by a considerable margin in the latter portion of the twenty-year period. At this particular point our 1948 history figures would look much better with 1948 illustrations had we reduced our dividend scales earlier, as did some of the other companies.

one company might be placed in a different substandard classification in another company. The subject of substandard life insurance is beyond the scope of this article.²¹

Eighth, the data in this article are applicable only to policies as of their dates of issue. Thus, the figures cannot be used to judge the relationship between the price of an existing policy and the price of a proposed new policy.²²

Ninth, the data are based on the assumption that premiums are paid annually. Companies differ to some extent in their carrying charges when a policyholder elects to pay premiums semi-annually, quarterly, or monthly. Thus, a price comparison based on quarterly premiums, for example, might produce somewhat different rankings than a price comparison based on annual premiums.

B. Factors Other than Price

This article is not intended to suggest that price is the only factor that should be considered in the purchase of life insurance. The financial integrity of the company and the services of the capable and conscientious agent are very important. It is essential to secure the proper types and amounts of coverage for the individual's circumstances and to have the beneficiary arrangements drawn properly. The settlement options and various other policy provisions should be considered. In conjunction with such items, however, price is or should be a factor of great importance to the careful buyer, particularly in view of the substantial variation that exists among life insurance prices.

C. Lack of Price Competition

In the opinion of the author, the intercompany price variation shown in this article is very substantial, particularly in view of the fact that the data pertain to the fifteen largest United States companies selling participating policies. In earlier studies that included more companies, the author found even larger amounts of variation.²³ Indeed, the price differentials are so large that the

²¹ For a brief discussion of substandard life insurance prices, see RETAIL PRICE STRUCTURE, *supra* note 1, at 129-33.

²² For a detailed discussion of the price aspects of the replacement problem and the dangers involved in generalizations in this area, see *id.* at 205-16.

²³ See, e.g., *The Relationship Between Benefits and Premiums in Life Insurance*, *supra* note 6. In that study, among the \$10,000 participating straight life

(Continued on next page)

following question might be raised: In the absence of extremely important non-price considerations, would a buyer pay one of the relatively high prices if he were aware of the price of the policy in question and the prices of available alternatives?

Price competition, by definition, cannot exist in a market characterized by price ignorance. The amount of intercompany price variation among essentially comparable policies suggests that price ignorance may be present and that price competition may not be effective. One possible explanation for this situation is the complexity of life insurance policies and the attendant general lack of buyer sophistication. Moreover, even when the facilities are available for detailed price calculations, the analyst is faced with formidable problems in securing the necessary policy data, especially in connection with participating policies.²⁴

D. Need for Price Disclosure

What, then, can be done to increase the effectiveness of price competition in life insurance? In the author's opinion, the solution to the problem lies in the development of a rigorous system of price disclosure that would make it possible for careful buyers of life insurance to obtain enough price information to permit them to make reasonably informed purchase decisions. Such a disclosure system would have to be based upon a standardized method of price measurement and a standardized set of interest, mortality, and lapse assumptions.²⁵

Price disclosure is important not only to the buying public but also to the life insurance business. Price information is so vital in the marketplace and is so fundamental in a company's operations that some of the most serious problems facing the life insurance business may stem directly or indirectly from inadequate price disclosure. Perhaps the most serious problem is the

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policies issued in 1962 to standard males aged 35 by eighty-eight companies, the twenty-year E-values (using assumptions different from those used in this article) varied from \$175 to \$1,078, a range of \$903. Among the corresponding twenty-payment life policies issued by fifty-four companies, the E-values varied from \$230 to \$1,238, a range of \$1,008.

²⁴ For a discussion of the policy data problem, see *RETAIL PRICE STRUCTURE*, *supra* note 1, at 62-69.

²⁵ One possible approach to price disclosure in life insurance would be to revise Schedule M in the annual statement blank promulgated by the National Association of Insurance Commissioners for use by life insurance companies. For a detailed description of this approach, see *id.* at 217-29.

relative decline of life insurance in recent years as a savings medium in the American economy. It is possible that inadequate price disclosure and the attendant lack of effective price competition have contributed in two ways to the apparent relative decline of life insurance as a savings medium. First, many buyers may become suspicious when they are unable to determine readily the price of their protection, with the result that they buy either term insurance or no insurance at all. Second, a lack of effective price competition may have denied the life insurance business some of the desirable effects that flow from competition, such as the results of a continuous and intensive search for more efficient ways of furnishing life insurance protection to the public.

A wave of disclosure requirements has been gaining momentum in every area of business activity in the last three decades. The broadening of disclosure requirements has accompanied the growing sophistication of American buyers, and it seems unlikely that the life insurance purchases of this increasingly knowledgeable public will support a satisfactory growth rate for the life insurance business in the face of inadequate and often misleading price information. It is to be hoped that the near future will witness the evolution of techniques through which meaningful price information can be channeled to policyholders and prospective purchasers of life insurance.²⁶ Such a trend should raise the stature of the business and strengthen public confidence in the institution of life insurance.

²⁶In recent months, there has been considerable discussion of this subject in the insurance press, in the general business press, among life insurance company officials, and among regulatory agencies. See e.g., Sesser, *Insurers Under Fire*, Wall Street Journal, Sept. 5, 1967, at 1, col. 6; *The Need for Full Price Disclosure*, Probe, Oct. 11, 1968, at 3; *Hart Assails "Disclosure Gap" Seen Between Life Insurers and Holders*, J. Commerce, Oct. 16, 1968, at 9; Gribbin, *Senator Demands More Truth in Insurance*, Nat'l Observer, Oct. 21, 1968, at 7; *Hart Warns of "Truth in Life Insurance" Bill*, Nat'l Underwriter (Life Ed.), Oct. 26, 1968, at 15; Picone, *Sen. Hart's "Truth in Life Insurance Cost" Drive is Slowed; VA Refuses to Cooperate*, J. Commerce, Nov. 14, 1968, at 7; *Possible Senate Study of Costs: Some Background*, Nat'l Underwriter (Life Ed.), Nov. 23, 1968, at 1; *Urges Industry to Answer Call for Cost Formula*, Nat'l Underwriter (Life ed.), Dec. 21, 1968, at 1, 19; and Belth, *SGLI, the VA, and Life Insurance Price Disclosure*, Probe, Jan. 6, 1969, at 1-3. The American Life Convention and the Life Insurance Association of America, two major trade associations, recently formed a joint Special Committee on Life Insurance Costs to study this problem. The chairman of the committee is E. J. Moorhead, F.S.A., Vice President of the Security Life and Trust Company, Winston-Salem, North Carolina. In addition, a special subcommittee of the Blanks Committee of the National Association of Insurance Commissioners has been formed to consider the same problem in the context of the Schedule M revision proposal referred to in footnote 25. The chairman of the subcommittee is W. Harold Bittel, F.S.A., Chief Actuary of the New Jersey Department of Banking and Insurance.

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