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BOOK REVIEWS AND NOTICES*

Mortimer Spiegelman, *Society of Actuaries' Textbook, Introduction to Demography*, pp. xxi, 309, The Society of Actuaries, Chicago, 1955.

As stated in the author's preface, "the primary purpose of this volume is to introduce students who are preparing for the examinations of the Society of Actuaries to the methods of demography." In part it represents a revision of the "Study Notes" by Mr. Spiegelman which for some years have been distributed to students in connection with the demographic portion of Part 5. However, it includes several entirely new chapters dealing with topics that were not covered in the Study Notes. The students are indeed fortunate in having such a readable, well-organized, and authoritative text for this part of their study. The Education and Examination Committee has wisely permitted the inclusion of some material on topics not required for the examinations in order to secure a well-rounded presentation of the subject. Thus, this text will also be useful as a reference book for practicing actuaries who find themselves in need of demographic information. As there have been few previous attempts at a systematic treatment of the fundamentals of demography, it will also be useful to many persons outside the actuarial profession. In addition to the traditional topics of censuses and vital statistics, the rates and ratios computed therefrom, and the construction of life tables from population data, there are new chapters dealing with projections of mortality, morbidity statistics, family formation, composition, and dissolution, fertility and reproduction, the distribution of the population, the working population, and population estimates and projections.

In the application of demographic methods, numerous situations arise in which the investigator has a choice of methods of procedure, or of different possible measures of some demographic phenomenon. It is most fortunate that the author has not contented himself with merely enumerating the various alternatives in such cases, but has clearly indicated the advantages and disadvantages of each. The very careful and painstaking research that went into the preparation of this book makes it especially valuable. The entire manuscript was read by Dr. Henry S. Shryock, Jr., of the Bureau of the Census, and by Dr. I. M. Moriyama of the National Office of Vital Statistics—both men of long experience in demographic work—and each chapter except for the first two and the last was submitted for comment to one or more specialists. An excellent feature is the extensive list of references dealing with the subject matter of each chapter. Thus the user who wishes to pursue any subject further will know at once where

* Books and other publications noted with an asterisk (*) may be borrowed from the library of the Society of Actuaries, in accordance with the rules stated in the Year Book.

to look for more detailed information. Also to be commended is the inclusion of recent developments right up to the publication date.

The reviewer of a book which comes out bearing the stamp of approval of so many experts in the field is in a difficult position, and it would be treading on dangerous ground to venture any critical observations. Comments of this nature will therefore be limited to two minor points on which the reviewer must share responsibility with the author. There has arisen, perhaps fortuitously, an inconsistency of notation between this text and Jordan's as regards mortality tables subdivided by cause of death. Mr. Spiegelman has followed the present reviewer (*RAIA XXXVII*, 283) in using the presence or absence of parentheses around the superscript to distinguish the functions in the single decrement tables from partial functions in the multiple decrement table, while Jordan (Chapter 15) retains the parentheses in both cases and uses a "prime" to distinguish the single decrement functions. The reviewer had a copy of Jordan in his possession (but had not read the portion in question) when he was asked to read the manuscript of Mr. Spiegelman's Chapter 5.

Finally, it is suggested that the algebraic development between equations 5:17 and 5:28 (a portion of which is attributed in a footnote to the reviewer) can perhaps be shortened.¹ Substituting from 5:17 in 5:9 gives

$$q_x^z = \frac{{}_2aD_x^z}{E_x^z} = \frac{{}_2aD_x^z}{P_x^{z+1} + {}_aD_x^z}. \quad (1)$$

If the assumption which led to 5:14 may be used again, then it is possible to express ${}_aD_x^z$ in terms of D_x^z , P_x^z , and P_x^{z+1} . Thus 5:14 gives at once

$$\frac{\delta D_x^{z+1}}{P_x^{z+1}} = \frac{\delta D_x^z}{P_x^z},$$

or, using 5:17 and 5:1,

$$\frac{{}_aD_x^z}{P_x^{z+1}} = \frac{D_x^z - {}_aD_x^z}{P_x^z}.$$

Solving for ${}_aD_x^z$, we obtain

$${}_aD_x^z = \frac{P_x^{z+1}}{P_x^z + P_x^{z+1}} D_x^z.$$

Substituting this expression for ${}_aD_x^z$ in the final expression for q_x^z in (1) above gives, on simplification,

$$q_x^z = \frac{D_x^z}{\frac{1}{2}(P_x^z + P_x^{z+1} + D_x^z)},$$

as in 5:28.

T. N. E. GREVILLE

¹ This alternative development was suggested to the reviewer by Mr. Paul W. Nowlin, a student of the Society.

R. W. Goldsmith, *A Study of Saving in the United States*, Vol. I, pp. xxx, 1138; Vol. II, pp. xxiv, 632; Princeton University Press, 1955.

Over the first half of this century, what groups in this country have saved portions of their incomes? How much have they saved? Through what media have the savings been made? What motivated the saving? The life insurance business, utilizing the services of Dr. Raymond W. Goldsmith, has financed a monumental study, costing nearly a quarter million dollars, in an attempt to find answers to these four questions. The results appear in three volumes. The first two, with which this review has to do, have already been published. The third is on the way.

No study of this subject has heretofore been conducted on such a tremendous scale. It contains a vast amount of material, including some 550 tables of data, which could occupy the time of students for years to come. Volume I presents the main conclusions of the study in 225 pages including the preliminary statements. The remaining 913 pages are devoted to tables and explanatory comments giving the original sources of the figures. Volume II in 632 pages explains, discusses and supplements these tables. Volume III, we are informed, will be made up of four special studies supplementing Volume I.

The period covered by the study is the fifty-three years 1897 to 1949. Much of significant interest has occurred in the economy of the country since 1949. It is therefore to be hoped that some of the main conclusions of the study may before long be tested in the light of more recent experience. Most prior studies of saving in the United States have started with 1929 or the early 1930's. This one has the great advantage of covering a much longer period, thus providing a better perspective of the course of savings.

However, the problem is complicated since the period covered includes two World Wars and the Great Depression. In wartime, personal saving is abnormally large, and in depressions the opposite. Therefore, it was necessary in drawing conclusions about the normal saving pattern to omit certain years in order to obtain a period that could be considered reasonably normal. This "normal" period covered 43 years and was subdivided into the four parts: 1897-1916; 1919-1929; 1934-1941; and 1946-1949—the ten years 1917-18, 1930-33, 1942-45 being omitted. However, the basic tables contain the figures for the entire period, and in some instances charts and conclusions relate to the entire period. Students are therefore in a position to do independent research, making such breakdowns or combinations as may be desired. The basic data vary as to their relative accuracy. Some involve small and others relatively large possible errors. Effort is made to inform the student on these points as he works with the various tables.

The study took five years. Dr. Raymond W. Goldsmith, who has long had an interest in the subject of saving, was assisted by a staff and worked in collaboration with an Advisory Committee. This Committee, which experienced changes in personnel following its original appointment in 1949, was made up of nine persons, of whom six were economists qualified in this field who came from outside the life insurance business and three were officers of member companies of the Life Insurance Association of America. Dr. James J. O'Leary, Director of In-

vestment Research of the Association, acted as secretary of the Committee. The foreword, signed by Dr. Winfield W. Riefler, Chairman of the Advisory Committee, stresses the exceedingly heavy load of work borne by the members of his Committee in attending meetings and in reviewing and commenting upon the voluminous research memoranda prepared as the study progressed.

Dr. Riefler's statement goes on to say: "The Advisory Committee feels that Dr. Goldsmith has made a fundamental contribution in this study to our knowledge of saving and the American capital market. We believe that his work represents by far the most comprehensive and detailed study that has been made to date in this field. Dr. Goldsmith has broken new ground. He has provided rich new data on savings and has shown remarkable ingenuity in weaving together hitherto scattered sources of data. The results provide basic material for future students in the field of saving and the capital markets and indicate clearly areas requiring further primary research."

A study of saving naturally is of much interest to the business of life insurance since one of its major functions is the accumulation of the savings of policyholders and their productive investment in various areas of the economy. New investment of course is the life blood of a sound, expanding economy and since such investment depends upon the savings, a study of the saving process is of first rate importance to the country as a whole.

The reader can obtain a good understanding of the results of the study by reading the summaries in the various sections. First there is a twenty-page comprehensive over-all summary early in Volume I. Then there are five summaries in subsequent sections. By reading these six summaries one can get the "feel" of the study and can then continue his investigations to his heart's content. It might be added that despite the monumental size and scope of the study, both Dr. Riefler and Dr. Goldsmith point out that because of time and budget limitations it had been necessary to reduce greatly the original plans for analysis of the data!

In setting up the study it was of course essential to define clearly the particular saving concept used. The one most used is called the Standard Social Accounting Concept. This excludes military durables and soil improvement but includes consumer durables and homes. The inclusion of consumer durables is sometimes questioned in studies like this, but Dr. Goldsmith, I believe, fully justifies it in this instance. Because of the changes in prices during much of the period studied, depreciation charges are computed on replacement costs and not on original costs, thus departing from usual business practice. Capital gains and losses are not considered as savings. There is a description of saving according to the business accounting concept and to the cash flow concept also used by business. Frequently tables are presented according to the different concepts. However, the primary emphasis throughout is upon the Standard Social Accounting Concept.

Because of the changes in prices during the period, many of the tables and conclusions have been based upon adjusted data involving the use of what are called "deflators." This means that figures for "real" saving are developed

based upon dollars of constant purchasing power. For the most part the deflator used involves assuming an index of 100 for the dollar of 1929 based upon the general price level. Two other deflators at times used are based (a) upon group price levels or (b) upon indexes of wage levels, still employing in each case 1929 as 100.

Incidentally the use of the word "deflator" in this connection is somewhat confusing. For the 21 years prior to 1919 and for all of the 1930's the number of 1929 dollars to achieve a given purchasing power is greater than the number of actual dollars. Thus the factors for those years are really "inflators." The 1920's as a whole varied little from the 1929 level. It is only since 1941 that the factors are significant "deflators," in that to achieve constant purchasing power they produce 1929 dollars substantially smaller in number than the actual dollars. To use the word "deflator" when increasing the 1895-1916 dollars to equivalent 1929 dollars is anomalous, to say the least. Why not use a neutral term, such for example as "levelers"? These would be factors with which to convert actual dollar figures to those of a constant purchasing power at a given level, *e.g.*, the level of 1929. Another alternative might be "equalizers." With these introductory remarks, we will take up the four basic questions posed for the study.

WHO SAVES AND HOW MUCH?

To obtain an answer to the question "Who saves?" seven saver groups were distinguished and studied independently. They are:

1. Nonagricultural households and unattached individuals
2. Agricultural households and individuals
3. Unincorporated business enterprises
4. Corporations
5. State governments
6. Local governments
7. Federal government

Combining the results for all seven groups yields the national saving.

Among these saver groups, nonfarm households and individuals bulk large. Over the normal period they account for 70.6 percent of total saving. Corporate saving comes next with 16.7 percent, followed by 8.0 percent for state and local governments combined, 3.5 percent for unincorporated businesses, 3.1 percent for agriculture and -1.8 percent (dissaving) for the federal government. When figures for the entire 53-year period are combined, the heavy deficits of the federal government and the altered patterns of personal saving during the two wars and the depression greatly distort the picture.

When personal savings of the farm, nonfarm and unincorporated business groups are combined, the national saving during the normal period thus accounted for reaches the large figure of 77.2 percent of the total saving. Furthermore, Dr. Goldsmith finds that there is a heavy concentration in this classification in that in recent years more than 80 percent of personal saving appears to have been contributed by the 10 percent of households having the highest incomes.

Combining these figures we arrive at the conclusion that close to $5\frac{1}{2}$ million families account for about 62 percent of the total saving in this country.

An interesting attempt is made to develop a formula representing the average savings of an individual who has a disposable income (gross less taxes) of Y which is in excess of a disposable income b , the zero saving point. The formula is a straight line one, $S = a(Y - b)$ where a represents the average change in saving per unit change in income. The derivation of the formula will be discussed in the forthcoming Volume III but the values of a and b for the first four subperiods shown in the table below have been furnished by Dr. O'Leary. The values for the entire normal period have been estimated from the chart containing five lines—four for the subperiods (different somewhat from the ones previously described) and one for the normal period, all in 1929 dollars. The values of a and b are as follows:

Period	a	b (in 1929 \$)
1897-1906. . . . .	.28	251
1907-1916. . . . .	.35	341
1919-1929. . . . .	.40	416
1929-1941. . . . .	.55	535
Normal period (43 yrs.) . . . . .	.17	188

There is a certain consistency in the changes shown for the four subperiods. The line for the normal period, however, appears incongruous on the chart, as do the figures in the last line above. An effort is made in the text to explain the confusing incongruity as resulting from the interplay of the variations in a and b . However, it is not very helpful. We should be inclined to have omitted the line (as did the reviewer in the *N. Y. Times*¹ where he reproduced the chart) and relegated the discussion of its incongruities to a paragraph in the text.

To make the chart clearer, take the figures for a disposable income per head of \$700 of 1929 dollars or \$2,800 for a household of four persons. The savings for the four subperiods then become approximately \$503, \$503, \$454, and \$363, respectively. Using data for the entire normal period, the resulting saving figure of \$348 is again incongruous. Commenting on the figures for the four periods, Dr. Goldsmith concludes that "the average household must have an ever-increasing nominal or real disposable income per head before it does any saving; or to put it differently, that an increasing level of real consumption has been necessary throughout the past half-century to elicit the same proportions of saving."

Coming to saving on the national scale, the study indicated that during the past fifty years, saving has shown an upward trend at a rate of approximately $1\frac{3}{4}$ percent a year if figures are adjusted for changes in the price level and for population growth. This means that the real saving per head has doubled every forty years. There is an interesting conclusion that after a deep and extended

¹ May 29, 1955.

trough in the 1930's the level of saving after World War II appears to be back on the trend line established during the first thirty years of the century. From the data to 1949 it is concluded that there is no reason to reject the hypothesis that we are still experiencing a rate of growth of real national saving per head of a little less than two percent a year. It will certainly be interesting to learn from the experience since 1949 whether the hypothesis still holds. From such data as are available for the 19th century, Dr. Goldsmith comes to the interesting conclusion that the trend of real national saving per head during that hundred years does not seem to have differed much from that of the past fifty years.

For the entertainment of the actuary it is interesting to note that four methods of extrapolation appear at various times in the study, *viz.*, the arithmetic straight line, the arithmetic parabolic, the logarithmic straight line, and the logarithmic parabolic, the last two using semilogarithmic paper.

For short periods over the years there have been marked variations in the volume of national saving. World War I, and the short period of low economic activity that followed closely after it, caused dips in national saving; but in the chart based upon 9-year moving averages they are hardly noticeable. The Great Depression, with its enormous impact on personal saving and business enterprise, resulted in national dissaving in 1931-34, reaching a maximum of \$10.5 billion in 1932 and a total of \$27.1 billion for the four years. There was dissaving again in 1943-1945 (a total of \$18.2 billion for the three years) because of the huge war expenditures, despite increases, some large, in the other categories of saving. National saving reached a peak of \$42.2 billion in 1948.

There are interesting charts in this section analyzing national and personal saving by various periods; by aggregates; on a per capita basis; according to various accounting concepts; on the basis of current and "deflated" dollars; and using 9-year moving averages. Charts also show how logarithmic straight line and parabolic trends fit the data.

The proportion of the net national product saved by the nation was reasonably stable throughout the normal period, averaging 12.6 percent, with a high of 16.2 in the period 1922-1929, followed by 15.0 in 1946-1949. The low was 10.7 percent for the period 1915-1921. Although that includes the two war years 1917 and 1918, practically no distortion is caused for the reason that the average yearly saving for those years was close to the average for the rest of the period.

The stability of the national saving ratio was largely the result of the stability of the largest component of national saving, namely personal saving. This, as we have seen, accounted for about 77 percent of all saving during the normal period, and amounted to about 11 percent of disposable income. During periods of practically full employment in peacetime (1902, 1905, 1929, and 1948) the ratio rose to 14 or 15 percent.

Among the personal saving groups, nonfarm households and individuals exhibited remarkably stable saving ratios during the normal period, the average for which was about 13 percent, with variations of only a point or two one way or the other for the subperiods. For the depression period, 1930-1938, the ratio was about 5 percent, and for the war period 1939-1945, about 21 percent. This

classification of personal saving showed positive saving throughout the entire 53-year period, with a saving ratio of 14.7 percent.

Farmers showed wide variations in their saving ratios. Prior to 1939 they were relatively small (highest 7.5) with some negative figures. The ratio was about 31 percent during World War II and 15 percent in 1946-1949. The average for the normal period was 4.6 percent. The savings of farmers and of the next group to be considered have but little effect upon national savings since, as we have seen, each accounts for between 3 and 4 percent of such saving.

Unincorporated businesses, for which the data left much to be desired as to accuracy, had saving ratios which also showed wide variations, with an average for the normal period of 6.3 percent. During the depression years 1930-1933 there was dissaving at the rate of about 74 percent of income and during World War II a positive ratio of about 25 percent.

The corporate saving ratio has been relatively large during the normal period; in fact, it is the largest of any of the saving groups. For this period the average was 26.1 percent, with a 1946-1949 high of about 41 percent and a low of 24.2 in 1909-1914. During the depression period there was a severe setback, the dissaving ratio being 175 percent in 1930-1933 and 27 percent in 1934-38. Corporate saving, as previously noted, is by amount saved the second largest saving group, accounting for 16.7 percent of all savings during the normal period.

State governments showed positive saving throughout the entire 53-year period, for which the saving ratio was 18.0 percent. For the normal period it was 15.6 percent. Local governments, small by amount of savings, varied considerably over the entire period in their saving ratio. For the normal period it was 7.4 percent and for the entire period 5.8 percent. The Federal Government showed a slight deficit for the normal period, and because of the wartime and depression deficits showed a dissaving ratio of about 55 percent for the entire 53-year period.

FORMS OF SAVING

We come next to the results of the research into the forms of saving, the magnitudes under the various classifications and the changes that have occurred over the 53-year period. We will consider first eight major classifications of personal savings, analyzed for four periods, 1897-1908, 1909-1914, 1922-1929 and 1946-1949, that exclude wars and depressions. Because of this exclusion, government bonds do not appear, since in normal times they represent only a relatively small proportion of total savings.

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|---|--|
| 1. Consumer durables | 5. Residential real estate |
| 2. Life insurance reserves | 6. Bank deposits |
| 3. Pension and retirement funds | 7. Corporate and foreign bonds |
| 4. Savings and loan and credit union deposits | 8. Corporate common and preferred stocks |

For classifications 1, 2, 5, and 8, figures are given for gross saving, as well as for the net saving obtained by deducting attaching liabilities from the gross figures.

The following percentages that underlie the charts in the text show for the four periods, and on a net basis, the shares of these eight forms of personal saving in total personal saving:

Classification	1897- 1908	1909- 1914	1922- 1929	1946- 1949
Consumer durables.....	11.0%	9.9%	16.1%	23.9%
Life insurance reserves.....	7.5	7.5	11.1	15.6
Pension and retirement funds.....			2.4	19.0
Savings and loan and credit union deposits.....	.8	2.9	6.6	7.3
Residential real estate.....	11.1	14.1	11.2	- 4.1
Bank deposits.....	23.8	24.7	14.8	13.2
Corporate and foreign bonds.....	15.9	12.6	16.9	- 1.4
Corporate common and preferred stocks.....	20.3	19.0	18.3	10.8
Percentage of total personal saving represented by above classifications.....	90.4%	90.7%	97.4%	84.3%

The proportions of savings, through both consumer durables and life insurance reserves, more than doubled during the 53-year period. Consumer durables in 1946-1949 took more of the savings than any other group. They constitute one of the main competitors of life insurance for the consumer's dollar. Saving through pension and retirement funds, which include Federal Government insurance reserves, first appears in 1922-1929 and reached 19 percent by 1946-1949.

Residential real estate saving did not vary much in the first three periods. In the fourth period there was net dissaving because the borrowing on new and old properties exceeded new construction less depreciation. Savings in the form of bank deposits declined nearly 50 percent. Corporate and foreign bonds constitute another classification showing negative savings in 1946-1949 resulting from repayments and liquidations in excess of savings. The substantial decline in the proportion of saving going into the stock market, reaching 10.8 percent in 1946-1949, is noteworthy. Here again the figures for subsequent years will be of special interest in the light of the investment in stocks during the bull market by individuals, pension trusts and mutual funds.

The foregoing analysis is the only one in the text of the report relating to life insurance alone. In other places life insurance and pension data are merged. Life insurance figures alone may be obtained from the basic tables following the report. We will present three sets of life insurance figures from these tables showing (a) the average yearly net personal saving through life insurance in millions of dollars for seven periods covering the entire 53 years, (b) the corresponding percentages of total personal disposable income represented by the life insurance saving, and (c) total personal disposable income as computed from the preceding

two sets of figures (actual disposable income figures are to appear in forthcoming Vol. III).

PERIOD	LIFE INSURANCE SAVING		AVERAGE YEARLY DISPOSABLE INCOME COMPUTED FROM FOREGOING (\$ BILLION)
	Yearly Average (\$ million)	Percentage of Disposable Income	
1897-1908.....	146	.82%	18
1909-1914.....	222	.78	28
1915-1921.....	423	.78	54
1922-1929.....	1,011	1.41	72
1930-1933.....	644	1.13	57
1934-1938.....	1,512	2.44	62
1939-1945.....	2,528	2.28	111
1946-1949.....	3,593	2.09	172

During the first 25 years of the period the proportion of disposable income saved through life insurance remained nearly static. One wonders whether increases were inhibited by the unsatisfactory conditions in the life insurance business in the early years of the century, later corrected by remedial legislation. The increase in the 1920's was followed by a decline in the Great Depression when policyholders borrowed heavily on their policies or surrendered them for cash. The period 1934-1938 experienced the greatest relative saving through life insurance. In the World War II years, coincident with a tremendous amount of saving through Government bonds and a dearth of consumer durables, the life insurance percentage declined. There was a further decline in 1946-1949 when saving through Government bonds was very small but consumer durables were purchased in large volume. Whatever the cause, the proportion of total disposable personal income saved through life insurance declined from 1934-1938 to 1946-1949.

In connection with these figures it will be interesting to review the following percentages of life insurance premiums to disposable personal income, taken from the 1955 Institute of Life Insurance *Fact Book*.

Year	Percentage	Year	Percentage
1934.....	6.7%	1942.....	3.5%
1935.....	6.3	1943.....	3.3
1936.....	5.5	1944.....	3.3
1937.....	5.3	1945.....	3.4
1938.....	5.7	1946.....	3.5
1939.....	5.4	1947.....	3.6
1940.....	5.1	1948.....	3.5
1941.....	4.3	1949.....	3.6

To relate these figures to the ones in the preceding table it must be recalled that additions to reserves (saving) take place only after payments to policyholders and beneficiaries, expenses and taxes have been met from the companies' premium and interest incomes. The *Fact Book* premium ratios could therefore not be expected to correlate closely with the saving ratios in the Goldsmith study. However, they both indicate downward trends, although the grouping 1939-1945 in the study may have obscured a leveling off after 1941. Incidentally, it is interesting that the *Fact Book* premium ratios for 1950-1954 range from a low of 3.4 in 1951 to a high of 3.7 in 1954.

The study presents a breakdown of the forms of personal saving under four general classifications designated as A, B, C, and D. A includes highly liquid savings—currency, deposits and U.S. Government securities; B, only slightly less liquid, includes saving through securities (other than U.S.) and life insurance. The bulk of C is made up of real estate and mortgage holdings—a rather illiquid group. D represents definitely illiquid assets such as social security and pension reserves, consumer durables, livestock, and inventories in agriculture and unincorporated business enterprises.

The following percentages are taken from the tables upon which the chart in the text is based. They are on a gross, not a net, basis:

Class	1897-1908	1909-1914	1922-1929	1946-1949
A.....	20.3%	19.9%	6.3%	14.9%
B.....	39.5	33.2	41.6	18.0
C.....	25.2	31.7	34.5	19.9
D.....	15.0	15.3	17.6	47.2

Only brief comment appears called for. The large decline in 1922-1929 in the liquid classification A resulted from the marked shift at that time to investment in common stocks. The percentages in classes B and C were forced down in 1946-1949 by the spectacular shift to the extremely illiquid forms of saving represented in Class D.

Still another breakdown of the forms of personal saving may be commented upon. It is the subdivision into three broad groups of saving, *vis.*, (1) for use by intermediaries, such as financial institutions which lend money to others; (2) for use by the borrowers directly; and (3) for self use, involving, for example, tangible assets for the use of the saver himself. The two charts in the text are on a gross and net (gross less liabilities) basis respectively. The percentages underlying the chart on the net basis are as follows:

Classification	1897-1908	1909-1914	1922-1929	1946-1949
For use by intermediaries	34.2%	35.3%	34.8%	53.7%
For use by borrowers...	41.4	43.4	33.5	18.2
For self use.....	24.4	21.2	31.7	28.1

The most striking changes revealed by these figures are the large increase in recent years in the saving through financial institutions and the marked decrease in direct lending to borrowers who use the money themselves.

If the figures for the above classifications are presented on a gross rather than a net basis, one sees the picture from the point of view of those who received the money which was saved. It will be sufficient here to show simply the percentages for the first and last of the four periods.

Classification	1897-1908	1946-1949
For use by intermediaries. . .	27.2%	39.4%
For use by borrowers.	35.0	11.6
For self use.	37.8	49.0

The most striking shift evidenced by these figures is the marked decrease in the proportion of direct lending to borrowers who use the money themselves. During the postwar period up to 1949, borrowers obtained over three times as much money from financial institutions as from savers directly; and those providing such things as homes and consumer durables have been receiving nearly one-half of all the savings. Incidentally, in recent years the most important items included among consumer durables have been automobiles, household appliances, furniture and musical instruments.

One section of the study is devoted to an investigation of the cyclical fluctuations in national and personal saving. Since they are too extensive to review here it will be sufficient to say that year-to-year variations in total savings were found to correspond in timing fairly closely to the business cycle.

Another interesting deduction from the study is that from 1900 to 1949 the current value of national wealth increased approximately \$810 billion, of which \$439 billion, or 54 percent, resulted from cumulated saving and the balance, \$371 billion, primarily from the rise in prices of land and of reproducible tangible assets.

WHAT MOTIVATES SAVING?

The section of the study devoted to the motivation of saving is short. This is understandable since here one deals with an exceedingly complex subject, much of it in the realm of psychology. It is difficult indeed to attach dollar figures to motives—to quantify, in the language of the report, the factors which rationalize saving requirements and to combine them in a formula.

Dr. Goldsmith classifies rational saving motives under three basic headings:

- a) Acquisition of certain durable tangible assets to be used in the saver's household.
- b) Provision for future expenditures such as maintenance of the saver and dependents after retirement; last illness and funeral expenses; estate to be left to surviving spouse, children and other dependents; college education of children; and general "rainy day" contingencies.
- c) Provision, where the saver intends to become an entrepreneur, of an equity fund necessary to establish and maintain him in business.

It is obvious that these motives are highly subjective. Many are influenced by group standards, such, for example, as desired relation of average real incomes during retirement and working life; the types and qualities of durable consumer goods regarded as part of the group standard of living (keeping up with the Joneses); the value put upon home ownership; and—in the long run possibly of greatest influence, in Dr. Goldsmith's opinion—the relative attraction of hired employment and entrepreneurial status.

Over the last fifty years several factors have tended to require an increase in the proportion of income that must be saved to achieve desired objectives. Among these factors are the following: the length of working life seems to have declined slightly and the length of the retirement period to have shown a rising trend, reflecting earlier retirement and increased longevity; the proportion of desired retirement income to average working life income has probably risen; consumer durables have acquired an increasing importance; and the downward trend of interest yields has required a larger saving ratio to achieve a given objective. When the saving ratio is related to disposable income (gross less taxes) it is not difficult to understand the problems involved in finding the money to save for all of the desirable objectives.

These factors help to show why people are so much interested in programs, governmental and otherwise, where the direct costs appear to be borne by other than the savers—federal old age and survivors insurance, unemployment benefits, industry-financed pensions, health insurance plans, and so forth. There may also be a vague feeling that somehow, through insurance or public assistance, provision will be made for other contingencies by public bodies. These considerations tend, in the mind of savers, to reduce the need for saving. On the other hand, working in the opposite direction, is the probability that in the future much less reliance than formerly can be placed upon support from children, relatives, neighbors and friends. That about summarizes the story on the motives for personal saving. It apparently was not felt necessary to comment on the motives causing business enterprises and governmental bodies to save.

VOLUME II

Very little space need be devoted to a description of the contents of Volume II. It is subsidiary to Volume I and is for the specialized student of the subject of saving. It explains, discusses and supplements the voluminous tables in the first volume. It consists of three parts. The first deals with the basic conceptual and statistical problems arising in the preparation of the estimates underlying the study. The second part deals with the components of nonfarm individuals' saving, and the third with the saving of other groups of economic units, *viz.*, farmers, unincorporated business enterprises, corporations, state, local and federal governments. These two parts, in the words of the report, are of a "strictly empirical nature and of a character which makes them interesting only to the specialist." Those who want to delve have unlimited space in which to do so, not only in Volume II but in Volume I as well.

CONCLUSION

When we consider the tremendous amount of time, thought, effort and money required to complete this study, we can hardly fail to wonder what practical use will be made of the results. Such a question is of course anathema to the pure researcher. We recall the incident of the research professor who burst from his laboratory declaring gleefully that he had just made a discovery that by no stretch of the imagination could ever be put to practical use. Maybe he did not stretch his imagination far enough. One never knows. Whatever its practical value, certainly this study of saving will be of tremendous interest to all concerned with economics both inside and outside academic circles, and no doubt in government as well.

The *New York Times* reviewer of the study starts his piece with the brave statement that "the day has been brought nearer when the specter of mass unemployment and catastrophic losses in a major depression will no longer haunt American workers, managers, investors and their families." It would be wonderful if analysis of the conclusions of the study could lead to actions which would help to achieve that goal.

What is needed are articles which laymen and legislators can readily comprehend prepared by qualified economists with a flair for lucid exposition. The average man will never see this study and if he did, he would not know how to relate its results to national policy. If another depression should ever overtake this country it will take a lot of convincing to make persons of average intelligence with no economic training believe that there has not been too much saving and too much plant construction. It was in such an atmosphere that the false mature-economy, oversaving theories of the 1930's were spawned. They will come to life again unless there are readily understood explanations of the facts as revealed by such studies as the one under review. We do not want any future NRA's arising from the same false thinking that gave birth to the ill-fated 1933 experiment. We would encourage Dr. Goldsmith and other economists inside or outside the life insurance business to prepare papers along these lines.

Perhaps it would be well to wait until another study now under way comes off the press, hopefully in 1956. It is the study entitled *Capital Formation and Financing in the United States, Trends and Prospects*, being made under the supervision of Dr. Simon Kuznets and financed also by the Life Insurance Association of America. The two studies taken together may have considerably more practical value than either one alone. Be that as it may, there can be no doubt as to the thorough, meticulous, painstaking manner in which the monumental study of saving was conceived and carried through to conclusion. Finally it should be emphasized that in this review we have selected for discussion the topics that appealed to us as of greatest interest. We hope the reader may obtain from it a fair idea of the scope of the study and of some of its main conclusions. To go further would have been impracticable in the space available. Those interested in doing so will find a wealth of material not covered at all in the review.

M. ALBERT LINTON

Examination of Insurance Companies, vol. 4, pp. xvi, 766; published by the New York State Insurance Department, New York, 1954.

This is the fourth in a series of six volumes of lectures on various aspects of the insurance business which the New York State Insurance Department has published and made available to the public.¹

The reader who has specialized in life insurance only will be struck by the tremendous scope of the work, dealing as it does with every sort of insurance business that is subject to the jurisdiction of the New York Insurance Department. Its broadness is probably its greatest single merit. Most of the material is not particularly advanced in character and there is little that could even be called fresh, but the assembly of so much historical record and basic information must provide a valuable and not unwieldy reference work.

The organization of the wide variety of lectures into a logical sequence was a difficult task. The present volume is an illustration that the solution has not always been satisfactory. Besides separate parts on the constitutional aspects of regulation, uniform accounting in property insurance, credit insurance, and the mechanization of recordkeeping and computing, there is a miscellaneous grouping of eleven chapters under two general headings. A large part of the volume is concerned with the nonlife portions of the insurance industry. Not all of that material, however, is lacking in interest for the life insurance man.

An initial chapter contains a detailed history of the commerce clause and the business of insurance, with an accent on Public Law 15 and ensuing state action.

A series of three chapters treats the development of uniform accounting in property insurance. The imminent application of uniform accounting regulations to the life insurance business has been left for discussion in a later volume. To life insurance men who have not yet determined what uniform accounting regulations mean or who may be speculating as to what they may come to mean in future years, it may be of much interest to read this account of the corresponding fire and casualty regulations which have existed now for almost ten years.

It is clearly pointed out that these regulations had their origin in problems associated with rate making and rate regulation, and that in many respects they deal with situations arising from the existence of fleets of companies in the fire and casualty insurance business. Much of the background against which Regulation 30 was promulgated will seem, therefore, to life insurance men to be very different from the world in which Regulation 33 will have its scope. Nonetheless, the basic philosophy underlying Regulation 30 will seem familiar to students of Regulation 33 and of the discussions and investigations which preceded it.

Of the three chapters on this subject, one is devoted to a historical account of the particularly difficult problems which faced the framers of Regulation 30, the solutions to some of these difficulties, and the important remaining troubles which beset those responsible for making Regulation 30 accomplish its intended purpose. The life insurance reader will find this chapter especially interesting to

¹ The first three volumes are reviewed in *TSA* VI, 223, and *TSA* VII, 166.

the extent that it may be considered to foretell the future course of affairs under Regulation 33.

Of the seven chapters grouped under the heading "Insurance Examination Techniques and Procedures," the only one of much interest to the life insurance man will be that on the Gain and Loss Exhibit. The treatment accorded to this important part of the Annual Statement is basically a historical one beginning with the derivation of the formulas one half-century ago, describing the influence of the Armstrong Investigation and the use and abuse of the Exhibit by the insurance "tipsters" of the 1930's, and leading up to the present form. This historical approach is a familiar one (*cf. Wightman's Life Insurance Statements and Accounts*) and an important one for those wishing to understand the significance attached to the various ratios, sums and differences derived from analyses of Annual Statement figures. Within recent years, however, the familiar gains from mortality, surrender, interest and loading have had more and more discredit heaped upon them as they have been increasingly distorted by violent shifts in yield rates on company portfolios, by tremendous programs of reserve strengthening and by the adoption of new standards for valuation and for non-forfeiture benefits. The Analysis of Increase in Reserves During the Year, as an exhibit, seems to attract less and less attention as time goes by. In addition, the adoption of the new form of Annual Statement in 1951, with its Summary of Operations on an accrual basis, has watered down the virtue of the first half of the Gain and Loss Exhibit which formerly was the only Annual Statement page showing income and outgo items on an accrual basis.

A new generation of life insurance accountants and actuaries is growing up which has not known firsthand the Gain and Loss Exhibit as it existed prior to 1939. It seems likely that, to these people in the future, the Gain and Loss Exhibit will be conceived simply as a breakdown of an operating statement by line of business.

Under the heading "Other Phases of Supervision," there is included a chapter about the N.A.I.C. Committee on Valuation of Securities. This is a factual account of the origins of the Committee and of the methods of determining investment values and the level of the mandatory security reserve. A nod is given to the interrelation of valuation standards, security reserve requirements and statutory limitations on surplus. There is an adequate discussion of the logical reasons for the present rules and for some of the more important proposals which have been made with regard to valuation of bonds. Little attention is given to preferred stocks and virtually no mention is made of common stocks. This may be quite disappointing to readers who feel that, currently at least, the most serious valuation problems are concerned with common stock statement values.

The last two chapters of the volume are devoted to discussions of mechanized recordkeeping and computing. The discussions are furnished in both cases by representatives of a very large company. The first of the two chapters covers punch card machines, and the second the application of electronics to the insurance business. In both chapters the writers have attempted to stress fundamen-

tals. The liberal use of examples to illustrate the types of procedures for which the equipment is suitable will undoubtedly cause some parts of these chapters to be outdated fairly soon. However, in the more important portions of the discussion the authors have set forth the fundamental characteristics of punch card and magnetic tape mechanized systems and the advantages and disadvantages of such systems, without reference to the unique features of any individual machines. These ABC's of thinking in this area will remain valid until they are superseded by the development of new and proved principles of machine operation such as automatic random access files or high-speed automatic communication systems.

It comes as a little surprise to realize that the lecture on punch card machines fills more of a void in current oral or written discussion than that on electronic systems. The present feverish interest in the latter accounts for the difference. It is comforting to realize that this present contribution has most of its opinions with respect to capacities and performance of machines grounded on a fairly long period of solid experience in actual machine operation.

ROBERT E. SLATER

Examination of Insurance Companies, vol. 5, pp. xliii, 595; published by the New York State Insurance Department, New York, 1955.

Part 1, comprising about half of the volume, is on the subject of rate regulation, with individual chapters on the various types of insurance whose rates are subject to Departmental regulation. While these matters lie outside the day-to-day experience of actuaries dealing primarily with life and accident and health insurance, some aspects may be of technical interest to such actuaries. The Introduction by Joseph F. Collins (Chief of the Department's Rating Bureau), Chapter 1 on workmen's compensation insurance rates by Frank Harwayne (the Department's Chief Casualty Actuary) and Chapter 11 by J. J. Magrath (Secretary, Federal Insurance Company) are particularly valuable in illuminating the area of common technical interest between the casualty and life insurance actuary.

Part 2 consists of five chapters on special aspects of supervision, of which the first (Chapter 12) is a discussion of retaliatory taxation by Raymond Harris (Counsel of the Department). Chapter 13 is concerned with the limitation of expenses on life insurance and annuities, written by Julius Sackman (Chief of the Department's Life Bureau). Mr. Sackman brings to this discussion the benefit of many years of experience in administering Section 213 and its supporting regulations. The historical review of the development of statutory limitation of expenses is interesting on this account, as well as inherently, to the young actuary who might not otherwise be aware of the probable venerability of the latest method for "buying business" dumped on his desk by an enthusiastic agency supervisor. The obverse of this is the attitude—explicit on these pages and in the Department's reports to the legislature—that there is some-

thing essentially evil in rapid growth, no matter how economically secured and no matter how carefully the costs are allocated to the resulting new business. Our rapidly expanding economy creates a rapid growth in personal insurance needs—a fact which is beyond the control of either the Department or the insurers. The New York Insurance Law and its administration do influence, to some extent at least, which insurers shall meet these growing needs—those the Department regulates or others, private or governmental.

In Chapter 14, James H. Braddock (Actuary, New York Life Insurance Company) deals with the compensation of life insurance agents. While the chapter is confined to compensation for selling ordinary business, as distinct from debit, group and individual accident and sickness insurance, it is an exhaustive and well-informed treatment of this area of compensation, which is of primary interest and importance in the operations of most life insurance companies. There are covered not only the respects in which the New York law affects agency compensation, but also very valuable background material on management philosophy. The reader may be prompted to consider how many restrictions of the law would be good compensation practice in any case, in the sale and service of a product which should last as long as the purchaser's insurance needs.

Chapter 15, on the standard nonforfeiture and valuation laws, is prepared by Alfred N. Guertin (Actuary, American Life Convention). It brings up to date and assembles in one place a description of a development which many regard as the brightest star in the crown of cooperation between our profession and those charged with state supervision of our business. It is particularly appropriate that this description should be by the individual who made so great a personal contribution to this development.

The author of Chapter 16, which deals with the reporting and allocation of income and expenses in life insurance, is Seymour Goodman, a Senior Insurance Examiner of the Department. This is a description of the occurrences to date in a subject which is likely to be of fundamental importance in the years ahead in the relationships between the New York Department, the Insurance Departments of the other states, and the insurers regulated by them. It is not surprising that, in an industry composed of hundreds of competing companies meeting a wide variety of different situations with different management objectives, there should have grown up considerable variety in accounting descriptions of what may superficially appear to be similar transactions. Regulatory authorities, who have to come to decisions on the basis of submitted statements, are understandably distressed if they feel these statements are not comparable. On the other hand, the companies' accounting systems must produce not only these statements but useful tools for management in administering rapidly changing situations flexibly and economically. Great judgment is required in setting standards of comparability which will not unduly impair the accounting system's ability to give management the tools it needs in dealing with new situations. In short, the need is for diagnostic methods that will keep the patient vigorous and

healthy, and not reduce him to a coma or a cadaver in order to refine the diagnosis. This chapter describes the steps thus far in what should prove a fascinating operation.

Part 3 consists of a description of the TIAA-CREF Retirement Annuity System by George E. Johnson (then Vice President and General Counsel of the System). This subject of variable annuities also promises to be of vital importance to the life insurance business over the years to come—that is, how best to combine the techniques it has developed for paying fixed dollar annuities over their purchasers' remaining lifetime with the new idea of making the amount of periodic payment dependent upon the investment results of an equity fund with the purpose of more nearly stabilizing the purchasing power of the annuity payments. This chapter is an excellent review of the studies by TIAA showing the economic and social need for such techniques, and of the detailed methods evolved by the TIAA-CREF System to effect the combination. While at this stage of the subject it is impossible for anyone to deal comprehensively with all desirable ways of meeting this need, and how these efforts should be regulated by state supervision, it is quite helpful to have spread on the record this informed discussion of one way of doing the job, at least in the particular situation of the TIAA-CREF System.

The earlier volumes of this series already represented a massive contribution to the literature of state supervision; in dealing in this volume with several subjects in which developments are still particularly fluid, the New York Insurance Department is certainly to be congratulated on adding further to the stature of an already impressive achievement.

BERT A. WINTER

Examination of Insurance Companies, vol. 6, pp. xxv, 739; published by the New York State Insurance Department, New York, 1955.

This volume contains the last of the series of lectures given to New York Insurance Department examiners by experts in different fields and designed to provide a training program covering all branches and aspects of insurance. A final volume yet to be published (Volume 7) will constitute a comprehensive index of all the lectures.

Volume 6 covers a variety of subjects and is divided into five parts. Part 1 contains two chapters on insurance regulation, one viewing it from the philosophic perspective and one dealing with it as an application of administrative law, plus a third chapter on the place and importance of life insurance in the national economy. Part 2 covers industrial life insurance. Part 3 deals with two special aspects of accounting and also contains a chapter on direct placement investments. Part 4 has chapters on several miscellaneous phases of supervision including the abandoned property law, treatment of life insurance policyholders, approval of policy forms, accident and health insurance rates and commissions, and the underwriting and investment exhibit of the fire and casualty statement

blank. Part 5 is composed of twelve short chapters, each describing the activities of one of the principal insurance trade associations.

The title of this series of volumes, *Examination of Insurance Companies*, does not adequately reflect the scope of the subjects covered by them. This has been pointed out in reviews of earlier volumes, and mention is made of this fact in the introduction to Volume 6. Actually, the series constitutes an extensive description of all types of insurance as carried on in the United States, with special emphasis on regulatory aspects and the means by which regulation is accomplished in New York. Each chapter has been prepared by one of the leading experts in the field dealt with, and the whole of the work constitutes an authoritative assembling of facts on the operation of all lines of insurance. It will provide a valuable reference work for anyone wanting to know about almost any aspect of insurance operation or regulation. In this volume only two chapters, those on treatment of policyholders and on the fire and casualty underwriting and investment exhibit, seem to be directed to the specific training of examiners, but they contain also much material of general interest. All the remaining chapters are broad descriptions or discussions of the matters covered, and the material contained in each would be useful to anyone interested in the particular subject, whatever his point of view or source of interest.

Although many aspects of the subject of insurance regulation give opportunity for differing points of view, most of the material in Volume 6 comprises factual description, and there is not a great amount of discussion of points which might be considered controversial. Because of this, there are comparatively few statements made with which a reviewer might be inclined to take issue. It is asserted that New York's abandoned property law could well serve as a model for other states, without mention of the fact that since its enactment a model law on the subject has been drafted and recommended to the states by the National Conference of Commissioners on Uniform State Laws. This model law, although not radically different from that of New York in its application to life insurance funds, contains some provisions which are generally felt to be improvements on the New York law.

The chapter on treatment of policyholders mentions the often heard criticism of the "fine print" in accident and health policies and goes on to refer to the laws in New York and many other states which prohibit "fine print," but it does not bring out that these laws make the criticism invalid. The description of the schedules of benefits used in group surgical expense is incomplete in that the \$150 schedule and the \$200 schedule are referred to as the two basic schedules without bringing out that multiples of these schedules are also in common use. These criticisms and the few others which might be cited all seem to this reviewer to be not of significant importance. The volume deserves to be rated high from the standpoint of the accuracy of the information contained in it.

Much of the material in this and the other volumes of the series covers situations where changes are constantly taking place, and therefore some portions of the work may be expected to grow to be out of date fairly rapidly. An example is the chapter on accident and health insurance, where the new field of major

medical insurance has developed greatly since the chapter was written. The chapter now contains only a brief paragraph on the new coverage. This need for periodic revision of the material is commented upon in the introduction to Volume 6; it is hoped that such revision will take place, since it is certain to be a very important source of information for all those concerned with the operation and regulation of all lines of insurance.

GEORGE H. DAVIS

D. Morrah, *A History of Industrial Life Assurance*, pp. 243, George Allen & Unwin, Ltd., London, 1955.

The author, who is not a professional insurance man, presents a history of industrial insurance in Britain from its early beginnings up to the present. The presentation includes a description of the state of development of industrial insurance at various points in its history against the economic, social and political background that then existed. As the author's most important source of information appears to have been the Prudential Assurance Company, his references to policy contract changes and liberalizations are taken principally from the company's practices. The difficulties encountered due to both World War I and II are described. Much of the work is devoted to various governmental investigations of industrial insurance and to a description of the legislation, if any, that grew out of each such investigation. The Government Annuities Act of 1864 (sponsored by Mr. Gladstone), which empowered the Post Office to transact over-the-counter insurance for small amounts, grew out of one of the early investigations of industrial insurance. An investigation in the early 1870's included a study of lapse rates, insurance on the lives of children, expense rates and other similar subjects which received attention in later years on this side of the Atlantic. That investigation resulted in the passage of the Friendly Societies Act of 1875 which formed the legal framework within which the British industrial insurance business was conducted for the following twenty years. Subsequent investigations dealt with the same subjects as well as with nonforfeiture value requirements, valuation requirements, and other matters. In 1914, the matter of nationalization of British industrial insurance was considered in a report of an investigation which eventually led to the Industrial Assurance Act of 1923. The Cohen Committee (appointed in 1931) investigated industrial insurance and considered nationalization in its report. A fairly extensive discussion of the industrial insurance sections of the report entitled "Social Insurance and Allied Services" (the so-called Beveridge Report—1947) is contained in the concluding chapters of the book. The Industrial Assurance and Friendly Societies Act of 1948 gave effect to certain of the Beveridge Report recommendations. Although nationalization was considered previously, the Beveridge Report was, according to the author, the first to officially recommend nationalization. A rather extensive analysis of the Beveridge Report arguments and recommendations with regard to industrial insurance is made. The appendix contains certain historical (1936 through 1952) statistics extracted from the Report of the Industrial Assurance Commissioner.

EDWIN B. LANCASTER

K. Black, Jr., *Group Annuities*, University of Pennsylvania Press, Philadelphia, 1955.

This book, which represents the author's dissertation for his doctorate at the University of Pennsylvania, is a well-deserved addition to the list of insurance texts of the Huebner Foundation. Dr. Black has set down the results of extensive research involving a survey of the leading insurance companies writing group annuities with respect to types of contract, administrative practices, rates, and underwriting requirements. Numerous other important considerations affecting group annuities are covered, such as the impact of the Internal Revenue Code, Federal Social Security benefits, trustee plans, and collective bargaining.

It is quite comprehensive in scope, covering both the general and technical aspects of the subject. It is perhaps too detailed in dealing with contract provisions and administrative practices but lacks completeness in certain instances by failing to give the reasons underlying the practices followed.

The reader should bear in mind that the text does not apply to the Canadian aspects of group annuities where they differ from the existing practices in the United States. These differences include the qualification of plans under the Dominion Income Tax laws, the effect on private plans of the sale of annuities by the Canadian Government, Social Security benefits, and differences in interest earnings.

The book is recommended as a complete, informative text for the student and as a handy reference for those having to do with the business of pensions. Besides a detailed table of contents and an alphabetical index, it contains an extensive bibliography on pensions and the related subjects of mortality trends, taxation, group life insurance and so forth. Moreover, the treatment of group annuities is as nearly up-to-date as it is possible to make it. Among other things, the subject is considered in relation to the 1954 Revenue Code, the Social Security Amendments of 1954, and the most recent actuarial studies on mortality improvement.

J. B. GARDINER

*D. M. McGill, *Fundamentals of Private Pensions*, pp. xi, 239, Richard D. Irwin, Inc., Homewood, Illinois, 1955.

This is the first publication of the Pension Research Council of the Wharton School of Finance and Commerce. The Council was organized in 1952 to study the field of private pensions and to aid in creating a better understanding of them. Members of the Council are leaders in the various phases of private pensions. The author is Research Director of the Council and is Associate Professor of Insurance at the Wharton School.

The stated purpose of the book is to provide background for later studies and to meet the needs of university students and trainees in insurance companies. It accomplishes this purpose admirably and goes so much further that it should prove of great value to everyone in the pension field; the hardened professionals would do well to refresh their knowledge by reading it.

There are many controversial areas in the field covered by this book. The

author courageously faces these issues and should be congratulated on the calm and unbiased manner in which he presents the pros and cons. In a relatively few pages, he is able to cover a wide area without losing the basic points which he wants to bring out.

The first half of the book deals with the underlying forces in the development of private pensions and the basic features and types of pension plans. In the second half, the author did an outstanding job in dealing with methods of financing, costs, and choice of funding mediums. To those who believe that the various methods of cost calculations of pension plans are complex and can be understood only by actuaries, the tables and appendixes are highly recommended. They enable those without actuarial training to understand the mystery of these calculations without very much study.

MORGAN H. ALVORD

T. F. Crocker, Jr., H. M. Sarason and B. W. Straight, *The Actuary's Pension Handbook* (1955 edition), pp. 10+ tables, Pension Publications, Los Angeles, 1955.

The tables making up this extensive collection of factors for the valuation of benefits and contributions of retirement plans are bound in loose-leaf form. The factors are available for eight interest rates, by $\frac{1}{4}\%$ intervals from $2\frac{1}{4}\%$ to 4% inclusive. These interest rates are combined with eleven total termination tables and six salary scales. For each combination, factors are presented for eleven retirement ages from 65 to 75; those for retirement ages 65 to 70, inclusive, are related to each age from 20 to retirement age, and those for retirement ages 71 to 75 are related to 20 ages.

The *Handbook* is divided into three main sections distinguished by different colored pages. The white page section contains the eleven sets of total termination rates. For each termination table there is shown the number of survivors at each age up to 75 and the probability of surviving to each retirement age from 65 to 75, inclusive. These factors can be used to divide a total accumulated employee contribution fund in an existing plan into two portions, one representing the present value of future termination benefits, and the remainder representing the present value of future retirement incomes. It is assumed for this purpose that the accumulated interest on employee contributions is at the valuation rate.

A green section deals with salary scales. It presents, for each of six scales, the probable relative salary at retirement compared with the current rate at each age under retirement age. This section also provides factors for estimating the probable benefit under each salary scale for each dollar of compensation at the present age. These factors may be used for the calculation of the expected future rate of salary and future benefits based on salary for three kinds of average salary, namely the lifetime average, the final 10-year average and the final 5-year average.

The buff section contains the benefit and payroll valuation factors for each combination of retirement age, interest rate, termination rate and salary scale.

The factors given for the valuation of benefits are the value of a pure endowment at retirement of \$1,000, the annual cost of such a pure endowment and the present value of \$1.00 per year to retirement age. The payroll valuation factors for each of the six salary scales show the present value of \$1.00 of annual income.

Since the factors for the valuation of benefits are all based on the valuation of a unit of pure endowment benefit, the values, so obtained, can be multiplied by maturity factors from any one of five different mortality tables after retirement. Maturity values are furnished for the 1951 Group Annuity Tables, a projection of the *Ga*-1951 Table, the 1937 Standard Annuity Mortality Table and the *a*-1949 Tables. The maturity value factors are furnished, with appropriate commutation columns, for the computation of the value of an annuity of \$1.00 a month.

The introductory material is very brief and not very helpful. In general, no indication is given as to the sources of the termination rates and salary scales used. The shortage of explanation and examples would seem to limit the usefulness of the *Handbook* to those thoroughly familiar with valuation procedures, and, possibly, to those who are already accustomed to the particular method for which the factors are most readily usable. Most established actuaries will probably have collected a set of similar tables adapted to their own particular methods and procedures for valuations. For such actuaries the tables might be of interest, and some use, as broad reference material. The *Handbook* seems most likely to be useful to a relatively new office that has not had an opportunity to collect tables from past experience.

Presumably each actuary using this *Handbook* will have to exercise a considerable amount of judgment in determining which termination rate and salary scale to use in the valuation of each retirement plan. If this function of the actuary is exercised with care, testing against past experience, and estimating prospective experience under each plan, as to both termination rates and salary scales, it would seem that the selection of an appropriate table might take more time, study, effort, than the valuation itself. Perhaps this is desirable where the size of the group would justify the time and expense and lend some reliability to the particular table selected.

It might well be argued that less elaborate mathematical techniques would be more appropriate for the valuation of small and medium sized retirement plans, where an extensive study or test of termination rates and salary scales is not practical or where the reliability of any selected table is doubtful.

JOHN B. ST. JOHN

A. G. Straub, Jr., *Whose Welfare?*, a Report on Union and Employer Welfare Funds in New York, Insurance Department, State of New York, pp. xx, 206, New York, 1954.

This volume reports on an investigation made by the New York Insurance Department of welfare funds managed by unions, welfare funds managed jointly by unions and management, and those managed by employers only.

The discussion of welfare funds is a most timely subject. The extent of the

interest in welfare funds is evidenced, during the past years, by the various types of articles that have appeared in many magazines and newspapers. However, there is a shortage of facts and statistics on the subject. The Insurance Department was limited in the use of personnel, money and time for its investigation—especially time. However, by working fast the Department achieved the element of surprise as well as meeting certain deadline dates.

This book appears valuable not only for the purposes stated therein, namely, as a report on union and employer welfare funds in New York, but also as educational material on group insurance for the actuarial student. In it, the student is made aware that certain improper practices exist, beyond the pale of the correct principles of group insurance set forth in his assigned reading. The report indicates that all is not quite as ethical as one might ordinarily believe.

Another advantage for the student who reads this report is that he will gain some practical important knowledge of the attitude of the New York Insurance Department. The report is also useful as a source for certain statistics, admittedly incomplete, that are otherwise difficult to find. Thus, it is possible to ascertain such characteristics of welfare funds as the percentage of premiums spent on life insurance as against accident and health and annuities; or one can find such figures as average commissions and fees paid for initiating and for servicing group contracts. These are but a few of the types of statistics that are available throughout the book.

The book states that the majority of union welfare funds are honestly and ably run but that in a minority of the cases corruption exists. It also states, in substance, that the integrity of the union people in welfare funds is about the same as that of other people operating welfare funds. However, from this survey, the lengthy treatment of union welfare funds, as compared to employer managed funds, might lead incorrectly to another inference. Further data regarding employer managed plans will be available for examination from the questionnaires which were sent out to self-administered pension plans during August, 1955; most of these are employer managed plans.

Since so little is known about welfare funds and since there is a serious lack of literature regarding them, the New York Insurance Department faces a most difficult task. The investigation attempts to seek out abuses and also shows certain instances where funds are used in a questionable manner. There was a feeling that in certain cases the commission and service fees were excessive and the report so states. An instance given compares three cases with premium volumes of over one million dollars each. In two cases, the first year commissions plus service fees are 13.6% and 12.1% respectively. These are considerably higher than the third case which showed .3% and which is taken as the yardstick. Commissions and service fees are compared with each other, but there is really no recognized legal standard to tell where to draw the line. However, in the two cases just cited, one intuitively believes that these commissions and service fees are too high for that premium volume.

A complete investigation necessitates examination of the books of insurance carriers, administrators and policyholders and then a correlation of the data.

The Department was fully aware of this problem and in many instances this was done. By inspecting these three sets of books, they were able to show in certain instances that a broker received payment from both the insurance carrier and the policyholder for the same service. Since the time of the investigation the Department has been doing further work on this problem.

Again, one can learn a great deal by seeing how the Department approached the problem of conducting this investigation. For example, by inspecting the books of insurance agents and brokers, it revealed that periodic checks payable to "Cash" amount to the exact integral percentage of premiums paid. In some cases these checks are endorsed by officials, an indication of "kickbacks." A different area studied is the type of eligibility rules provided for the certificateholders. In some cases they are found to have extensive restrictions.

The report ends by recommending that the State should have certain controls over welfare funds by providing for the following:

1. A fair code for commissions
2. Registration
3. Annual statements
4. Examination
5. Annual reports to employers and employees
6. Fiduciary character of trustees

ELI A. GROSSMAN

M. M. Davis, *Medical Care for Tomorrow*, pp. viii, 497, Harper & Brothers, New York, 1955.

"The prior question remains: why not expand voluntary insurance? The preceding chapters of this book have answered the question in two ways. First, they have shown that the voluntary principle has certain intrinsic limitations. Second, they have made clear that some chief proponents of voluntary plans have neither the philosophy nor the motivation to extend them to universal population coverage, still less to comprehensive medical services" (quotation from p. 393). The author believes that if insurance companies and medical societies continue to develop voluntary health insurance unopposed, comprehensive service plans and group medical practice will fail to develop widely. Alternatively, if consumer-controlled nonprofit voluntary plans are encouraged by legislation and subsidy, then group medical practice will expand everywhere and eventually compulsory nationwide insurance and medical care will follow.

The author, who is exceptionally well-informed, has been a medical care planner since 1910. However, this is a partisan book. It shows the impatience of a perfectionist who, intolerant of gradual progress, has turned in disillusionment to more revolutionary concepts. It has the unfortunate characteristic of listing in great detail the organizational and financial weaknesses of current medicine without balancing consideration of the many and great strengths. It espouses the concepts of compulsory health insurance and socialized medicine by

praising theoretical advantages and rationalizing away practical weaknesses. The author uses a dogmatic vocabulary with his glorification of "nonprofit," his distrust of business, his disregard of recognized personal incentives, his tolerance for organized pressures of his liking, and his intolerance of those opposed.

The author reasons that the common man will not voluntarily provide for medical care, as he does for food, alcohol, or tobacco, because he does not enjoy medical care. Therefore, medical care must be made available in sugar coating, and in order to preserve human dignity it must be made available uniformly to all. He says that voluntary insurance and the medical profession, as presently organized, cannot do this; only group medical practice (with supporting hospitals and other organizations), compulsory health insurance, and governmental subsidies can accomplish it. The whole system, he reasons, must be taken out of the doctors' hands and run by administrators representing the public, with whom the doctors would negotiate for income through their medical societies.

The author's ideas are widely held in some circles and may possibly forecast the future unless the medical profession and the insurance companies continue rapidly to expand their services. Certain improvements in the present system have come to the mind of this reader: Insurance plans will work more effectively if the medical societies and hospital associations develop more effective cost controls. In the same vein, standard fee schedules could be developed applicable to all families below certain income levels without regard to existence of insurance. The public requires better education as to what constitutes good medical care. Group medical practice should be permitted to develop without prejudice—and without special advantage.

In the present situation, insurance companies (including Blue Cross and Blue Shield), which appear to be the only means of preserving the traditional freedom of the medical profession, might well experiment and expand their plans to all possible types of medical and dental coverages and to all possible segments of the population. To the extent that insurance companies cannot provide coverage, they might consider encouraging local, state, and national governments to provide necessary funds for adequate services.

In my opinion, the author's plans could lead only to a pedestrian medical system without incentives, with little imagination, of poor relative quality and at a large national cost. Nobody can quarrel with the desire of the author to make good medical care available to all. But compulsory health insurance is a last resort.

DONALD D. CODY

SELECT CURRENT BIBLIOGRAPHY

In compiling this list, the Committee on Review has digested only those papers which appear to be of direct interest to members of the Society of Actuaries; in doing so, the Committee offers no opinion on the views which the various articles express. The digested articles will be listed under the following subject matter classifications:

1—Actuarial and other mathematics, statistics, graduation; 2—Life insurance and annuities; 3—Accident and sickness insurance; 4—Social security; 5—Other topics.

References to allied subjects will be found in the following publications: *Mathematical Reviews*, published by the American Mathematical Society—Subjects: Theory of probability, mathematical statistics, mathematical economics, various other mathematical topics; *Monthly Labor Review*, published by Bureau of Labor Statistics—Subjects: Cost and standards of living, employment and employment services, fringe benefits, handicapped, industrial hygiene, industrial relations, labor organization and activities, manpower, older workers and the aged, personnel management, social security (general); *Population Index*, published by Office of Population Research, Princeton University, and Population Association of America—Subjects: Mortality, fertility, marriage, divorce, the family, various other demographic topics; *Social Security Bulletin*, published by Social Security Administration—Subjects: Retirement and old age, employment, maternal and child welfare, health and medical care, various other topics in social security; *Journal of the Institute of Actuaries*—The review section contains digests in English of articles appearing in foreign actuarial journals.

ACTUARIAL AND OTHER MATHEMATICS, STATISTICS, GRADUATION

H. Cramér, *The Elements of Probability Theory and Some of Its Applications*, pp. 281, John Wiley and Sons, New York, 1955.

Part I of this volume, devoted to an elementary account of the foundations of probability, has chapters on the historical background, definition, basic rules of calculation, and applications of fundamental theorems, principally from games of chance. Part II is concerned with the common probability distribution functions and concludes with chapters on distributions in more than one dimension. Part III, on applications, deals essentially with the descriptive treatment of statistical data, sampling distributions, and problems of statistical inference. The book assumes a knowledge of calculus and algebra.

H. Vaughan, "Osculation of High Order," *Journal of the Institute of Actuaries*, vol. 81, part 1, no. 357, p. 53, 1955.

The author deduces a four-term central formula of polynomial interpolation, correct to second differences, with osculation of r th order—by which he means that adjacent interpolating arcs have equal ordinates and equal derivatives of orders 1 to r , inclusive, at the point of junction. The curves for high values of r show a pronounced waviness, which becomes, for infinite r , a discontinuity at the midpoints of the interpolation intervals; he shows, in fact, that the limiting expression is the ordinary second-difference interpolation formula, in which adjacent interpolating arcs do not join at all (except in special cases).

A. Bradford Hill, *Principles of Medical Statistics* (sixth edition), pp. ix, 314, The Lancet, Ltd., London, 1955.

This volume, now in its sixth edition, contains, in addition to introductory chapters on statistical method, a short description of the life table. The emphasis is on the fallacies and difficulties in the use and interpretation of medical statistics. A new chapter deals with the special problems encountered in evaluating clinical trials. The author also describes the use of random sampling numbers, of which he has added 16 pages in this edition.

LIFE INSURANCE AND ANNUITIES

*A. H. Mowbray and R. H. Blanchard, *Insurance, Its Theory and Practice in the United States* (fourth edition), pp. xv, 569, McGraw-Hill Book Company, Inc., New York, 1955.

Although many sections read the same as in the third edition, the chapters have been brought up to date and expanded in such a way that the book is a revision. A separate chapter is devoted to group insurance, and social insurance is now discussed in two chapters.

The Canadian Life Insurance Officers Association, *Canadian Life Insurance Facts—1955*, pp. 32, Toronto, June 1955.

This booklet, in its first edition, is designed as a handy source of facts and figures regarding the life insurance business in Canada. It is anticipated that the booklet will be brought up to date and reprinted at periodic intervals. Copies are available from the office of the Canadian Life Insurance Officers Association, 302 Bay Street, Toronto, Canada.

R. A. Goodell, "Nervous Conditions other than Insanity and Psychosomatic Disorders," *Proceedings of the Institute of Home Office Underwriters*, Eighteenth Annual Meeting, 1954, p. 12.

Nervous diseases which the life underwriter is likely to encounter are presented in a classified list with a description of the manifestation of the disorder. The author offers his opinion of proper action by the underwriter.

*W. Sachs, Editor, *Dictionary of Actuarial and Life Insurance Terms*, pp. 308, Konrad Tritsch, Würzburg, 1954; distributed by Kraus Periodicals, Inc., New York.

This is a multilingual dictionary in English, German, French, Italian, and Spanish. There are five sections, one for each of the languages. Within each section, the terms are listed alphabetically according to the language and opposite each, in columnar arrangement, are listed the translations into the other four languages.

ACCIDENT AND SICKNESS INSURANCE

P. M. Otteson, "Group Accident and Health Hospital Therapeutic Benefits—Measurement of Loss Costs for Ratemaking Purposes," *Proceedings of the Casualty Actuarial Society*, vol. 41, p. 116, 1954.

The general objective of this paper is to determine the extent to which individual company loss experience can be used as a basis for hospital therapeutic benefit rates (hospital miscellaneous benefits). Methods used to secure the necessary loss experience and for the interpretation of this experience for ratemaking purposes are given. Several tables are included showing the Federated Mutuals' group "hospital miscellaneous benefits" loss experience by type of hospital confinement, geographical area, age, extent of coverage and duration of hospital stay.

M. Kormes, "Prolonged Illness Insurance," *Proceedings of the Casualty Actuarial Society*, vol. 41, p. 102, 1954.

The author describes an approach to the coverage for the catastrophic aspect of a serious and prolonged illness as well as the methods used in arriving at a set of rates to be charged therefor. This paper is devoted to a description of the coverage and rate-making developed by the Massachusetts Blue Cross-Blue Shield.

Department of National Health and Welfare, "Incidence and Prevalence of Illness (National Estimates)," Report No. 7 of the Canadian Sickness Survey, 1950-1951, Queen's Printer, Ottawa, April, 1955.

The object of the survey was to obtain estimates of the incidence and prevalence of illness and accidents of all kinds; the amount of medical, nursing and other health care received; the volume of family expenditures for the various types of health services; and the prevalence of permanent physical disabilities. The present report is one of a series intended as a means of releasing interim information on the more important of the results, pending the preparation of a comprehensive publication containing more detailed information, together with a fuller description of the methods used. The survey was based on periodic visits to a sample of approximately 10,000 households distributed throughout the ten provinces in metropolitan, small urban and rural areas. The report contains various measures of morbidity, without regard to cause, for each sex according to broad age groups.

M. Fraenkel and C. L. Erhardt, *Morbidity in the Municipal Hospitals of the City of New York*, pp. 229, Russell Sage Foundation, New York, 1955.

The volume carries the subtitle "Report of an Exploratory Study in Hospital Morbidity Reporting." The opening chapters point out the need for hospital morbidity reporting and the methods used in the survey. The municipal hospitals and the characteristics of their patients are described. The experience is based upon almost 122,000 patients discharged during the period May to October, 1952. Data, with accompanying text, are concerned with the specific diagnoses by sex, color, and age, the length of hospital stay and the condition on discharge. Separate chapters are devoted to specific conditions, such as the obstetrical conditions, rheumatic conditions, psychiatric conditions with special reference to alcoholism, tuberculosis, cancer and the circulatory and other chronic diseases. Special problems in the hospitalization of children and of aged persons are dealt with in two separate chapters.

G. D. Davis, "Hospital Morbidity Study," Province of Ontario, pp. 83, Report to the Minister of Health, 1954.

This survey is based upon the diagnoses of causes of hospitalization of almost 650,000 patients who were discharged from or died in the public general hospitals of Ontario in 1951. The year 1951 was selected for the survey so that the results may be related to the census of population taken that year. The report deals with causes of hospitalization; methods of payment; age, sex and residence of patients; length of stay in hospital and related topics.

SOCIAL SECURITY

* A. Larson, *Know Your Social Security*, pp. xv, 220, Harper & Brothers, 1955.

This book, written in popular style, is intended as a compend of information about the OASI program (although the title would seem broader than this) necessary for all citizens, employers, employees, and self-employed persons. The author, now Under Secretary of Labor, was Dean of the School of Law of the University of Pittsburgh, and it is presumably in his former capacity that the book was begun. It is stressed, nonetheless, that the book should not be considered as official Government policy or interpretation.

The first Part of the book is a general philosophical discussion of what the OASI system is and what it should be. The last four Parts deal with the specific provisions of the present law as they affect employees, self-employed, beneficiaries, and employers.

Although written quite simply and in a readable fashion, these Parts are too detailed—going into much administrative matter that may not seem important to the general reader (such as listing 17 different ways of proving age).

Turning back to the first Part of the book, in the discussion of what social security is and how it should be changed, the comparison of social insurance and private insurance is somewhat naive. The author sees very few differences and places a great emphasis on the “insurance rights,” which in many instances were created by individuals making small contributions. Accordingly, he strongly opposes blanket-in the current aged; although he gives arguments in favor thereof, he points out why, in his opinion, these are invalid. He also opposes “pay-as-you-go” financing and favors inclusion of disability benefits, both temporary and permanent.

M. A. Linton, “Controversial Facets of Old Age Security,” *Proceedings of the American Philosophical Society*, vol. 99, no. 4, August 30, 1955.

Ten major points in connection with the OASI and OAA programs are examined in this paper. In essence, these could be called the ten major points on which there is, or should be, most public discussion where the subject of social security is concerned.

The popular acceptance of social security is pointed out and also the potential dangers if the nature of the system is not fully understood, such as raising the benefit levels too high. In discussing the retirement test, it is brought out that the new basis under the 1954 Amendments is a big improvement, although further improvements are possible; in any event, the arguments against removing the retirement test, such as high costs involved, seem controlling.

A strong argument is made for granting OASI benefits to the present retired, unprotected aged who have not been able to obtain the relatively small amount of wage credits to qualify for benefits. Under the heading “The Role of Old-Age Assistance,” the potential danger of an OAA program permanently supplementing OASI benefits is indicated, especially if the states begin paying about \$25 of OAA to all persons who might be defined as “needy,” since in those cases 80% of the cost is paid by the federal government. Finally, Mr. Linton deals with the much debated arguments regarding the validity of the Trust Fund, the interest paid to the Trust Fund being a subsidy from the General Treasury, and also double taxation. Although Mr. Linton is not in favor of large amounts accumulating in the Trust Fund, he clearly points out that the repeated charges regarding it are not true.

M. L. Stecker, “Why Do Beneficiaries Retire? Who Among Them Return to Work?” *Social Security Bulletin*, May 1955.

Although this article relates to a survey in 1951, since which time the retirement test and other important features of the OASI system have been considerably modified, it does give valuable information about why OASI beneficiaries retire. Relatively few workers retire voluntarily in good health. This is not to say, however, that those beneficiaries who did not retire voluntarily were anxious to obtain employment if they were still in good health, since many apparently enjoyed their retirement. The great majority of retired individuals apparently are not capable of obtaining or holding full-time employment. Workers who initially retired in good health are frequently (in about 25% of the cases) subsequently re-employed full-time. Other than during periods of great defense or war activity, employees who retire from industry and commerce are about equally divided between those who leave of their own accord, in many instances because of poor health, and those who are dismissed or compulsorily retired by their employer.

R. J. Myers, "Old-Age and Survivors Insurance: History of the Benefit Formula," *Social Security Bulletin*, May 1955.

Since the original Social Security Act of 1935, five different formulas have existed for the determination of benefit amounts under OASI. This article, after describing the several formulas, shows how they would apply to various illustrative wage histories. The benefits paid for those retiring currently are larger than the original act would have provided—not only in terms of dollars, but also in relation to wage at time of retirement. The 1954 Amendments significantly increased the relative adequacy of the benefits as compared with the 1950 and 1952 Amendments which, more or less, maintained the same level as the 1939 Act, taking into account changes in earnings levels.

R. J. Myers, "The Financial Principle of Self-Support in the Old-Age and Survivors Insurance System," *Actuarial Study No. 40*, pp. 13, Social Security Administration, April 1955.

Since 1950, Congress has clearly and repeatedly expressed its intent that the OASI system be maintained on a self-supporting basis. This study uses the cost estimates of the 1950 legislation to show that a considerable number of different contribution schedules could have been adopted to carry out this principle and that there is a very wide range in the amount that would have been accumulated in the trust fund under different schedules. In fact, the system could have been financed on a pay-as-you-go basis or on a fully-funded basis, or on various alternatives intermediate between the two, and still the financial principle of self-support would have been maintained. The study concludes with an analysis of the 1954 legislation in relation to the maintenance of the self-support principle in actual practice.

J. A. MacDougall, "Analysis of the Benefits under the Old-Age and Survivors Insurance Program as Amended in 1954," *Actuarial Study No. 41*, pp. 52, Social Security Administration, May 1955.

This study, the fifth in a series, analyzes the benefit relationships for the OASI system as amended in 1954. Detailed tables are given of illustrative benefits for various beneficiary categories, along with analysis of the instances where the different benefit formulas apply and where the minimum and maximum provisions take effect. Finally, level-premium cost figures relative to wage are given for various level monthly earnings, retirement ages, marital and family conditions, ages at entry, and mortality and interest bases. These figures indicate that the level-premium cost of the benefits can vary from as little as 2% of payroll, for a single male entering the system at a young age with maximum earnings and not retiring until age 68, to well over 100% of payroll for present older workers with dependents and with low earnings and retiring at 65.

T. N. E. Greville, "Present Values of OASI Benefits in Current Payment Status, 1940-54," *Actuarial Study No. 42*, pp. 22, Social Security Administration, July 1955.

Although the OASI system is not susceptible to actuarial valuation in the same sense as a private pension plan, nevertheless it is interesting to value from time to time the benefits for those in current payment status. As a rough standard of measurement, these present values may be compared with the existing trust fund, although this does not indicate the actuarial soundness or unsoundness of the program. The current study gives data for the last 15 years. As of the end of 1954, the trust fund was about \$20½ billion, whereas the present value of benefits in current payment status, based on an interest rate of 2½%, was about \$33½ billion, or some 63% higher. Not until 1952 did the present value of benefits in current payment status exceed the trust fund.

T. N. E. Greville, "Estimated Amount of Life Insurance in Force as Survivor Benefits under OASI—1955," *Actuarial Study No. 43*, Social Security Administration, September 1955.

The "amount of life insurance in force" under OASI is estimated to be about \$350 billion as of the beginning of 1955. This concept is somewhat analogous to the insurance in force under insurance company contracts, but there are certain important points of difference. Under OASI, conditions for benefit receipt are based not solely on life contingencies but also on elements under control of the beneficiary, such as marriage and employment. The "net" estimates given attempt to take these factors into account.

The amount of life insurance in force under OASI increased during 1954, largely as a result of the liberalized benefit computation methods under the amendments then enacted. A further increase—to perhaps \$400–425 billion—is anticipated by the beginning of 1957, as a result of coverage extension and lifting of the wage base by the 1954 amendments.

R. J. Myers, "Old-Age and Survivors Insurance Administrative Expenses," *Social Security Bulletin*, July 1955.

Although OASI administrative expenses are quite large in terms of dollars—close to \$100 million a year—they are relatively low when considered in terms of contributions and benefit payments (in 1954, representing 1.8% of contributions and 2.5% of benefit payments). Another interesting relative comparison of administrative expenses is with the taxable payroll on which contributions are based. Over the last 15 years, administrative expenses represented only about .05% to .07% of taxable payroll—at the lower end of the range during the war years and at the upper end during the last 6 years.

D. McCamman and A. W. Brewster, "Incapacity and Hospital Care of Aged Beneficiaries of Old-Age and Survivors Insurance," *Social Security Bulletin*, July 1955.

This article is particularly important for its data on hospitalization of aged OASI beneficiaries in 1951, with supplementary information as to the amount of nonhospitalized incapacity in bed at home. The latter is important as an indication of the potential area of increased usage if there were wider insurance coverage of the risk of hospitalization for the aged. Data on hospitalization are subdivided by sex and age, by ownership of hospitalization insurance, and by incidence and duration of hospitalization. There was relatively little upward trend with increasing age, and likewise little difference by sex in so far as the incidence rates are concerned, but those with insurance had the higher incidence by approximately 50%. On the other hand, the average duration of hospitalization varied little according to whether or not the individual had insurance and also did not vary appreciably by sex. It did, however, show a definite increasing trend with age for men with insurance, but not for men without insurance nor, irrespective of insurance status, for women.

"Estimated Prevalence of Long-Term Disability, 1954," *Social Security Bulletin*, June 1955.

This note gives an estimate of the number of persons with disabilities lasting more than 6 months, with subdivisions by age: under 14, 14–64, and 65 and over. It is recognized that the definition of "disability" assumed is just one of several possible and does not fully correspond to that which would be used under the "disability freeze" provisions of the OASI system. It is estimated that persons with such disabilities number 250,000 under 14 years of age, 2.9 million in the age group 14–64, and 2.2 million in

the age 65 and over group. Considerable question may be raised as to the meaning and classification of "disability" for the latter group—particularly among its older members.

OTHER TOPICS

U.S. Department of Health, Education, and Welfare, U.S. Public Health Service, National Office of Vital Statistics, "Actuarial Tables Based on United States Life Tables: 1949-51," *Vital Statistics—Special Reports*, vol. 41, no. 2, p. 33, April, 1955.

This report contains commutation columns (D, N, and M) and whole life immediate annuity values based on the 1949-51 United States Life Tables. Values are given for white males and white females at 2, 2½, 3, 3½, and 4 percent interest, and at 3 percent also for total males, total females, nonwhite males, and nonwhite females. Also included are the corresponding values on a continuous basis for white males and white females at 3 percent.

E. A. Lew and H. H. Marks, "Public Health Aspects of the 1951 Impairment Study," *American Journal of Public Health*, vol. 45, p. 597, May 1955.

The authors present those results of the 1951 *Impairment Study* which are of special interest to the public health profession. Attention is given first to the conditions, largely of an acute or contagious nature, which have traditionally presented public health problems. Consideration is then given to a number of chronic diseases which have been receiving increasing attention from public health departments.

C. A. McMahon, J. K. Folger, T. R. Ford, "Longevity of Retired Army and Air Force Officers," *Human Biology*, vol. 27, no. 2, p. 125, May 1955.

Mortality rates were computed from the records of 10,000 retired United States Army and Air Force officers over the years 1925 to 1948. The authors observed that officers who retired before age 65 experienced heavier mortality than the white male population in 1939-1941. Above age 65, the rates for retired officers were lower than the population rates. Mortality showed general improvement over the period of observation.

S. G. Kohl, *Perinatal Mortality in New York City*, pp. xxi, 112, The Commonwealth Fund, Harvard University Press, Cambridge, 1955.

This book is the second and final report based on a study undertaken in 1948 by The New York Academy of Medicine Committee on Public Health Relations. Nearly 1,000 prenatal, natal and neonatal deaths in New York City during 1950 were investigated to determine and evaluate the factors which contribute to deaths among the newborn.

J. S. Simmons, T. F. Whyne, G. W. Anderson, and H. M. Horack, *Global Epidemiology, A Geography of Disease and Sanitation*, vol. 3 (The Near and Middle East), pp. xxiv, 357, J. B. Lippincott Company, Philadelphia, 1954.

This volume is the third of a series started during World War II for military use. Current health conditions are summarized for political units within the area covered, with a discussion of the occurrence of various diseases and the racial, social and economic factors which influence the health of the population. The previous volumes dealt with Africa, the Far East, and the Pacific area.

C. S. Cottle, W. T. Whitman, *Investment Timing*, pp. x, 200, McGraw-Hill Book Company, 1953.

This book, which is a culmination of research on investment timing extending over a six year period, presents a critical analysis of formula plans, a technique developed to cope with the vagaries of stock price cycles by deciding according to certain predetermined mathematical standards the appropriate time to buy and sell stocks and bonds. The investor is provided with a discussion of such formula plans and the information essential to consideration of their use. The features of the most important types of plans are set forth and appraised in terms of fundamental assumptions, general operational features, buying and selling action, yield and capital appreciation, understandability, risks, and opportunities. The fundamental differences between constant-ratio plans, norm-type variable-ratio plans, non-norm variable-ratio plans, constant-dollar plans and dollar averaging are discussed and evaluated. The Appendix provides outlines of nine formula plans in actual operation. During the last three years of preparation, the work was financed in part through funds provided by the Life Insurance Association of America.

M. Bodfish, "The Hazard in Today's Home Loan Terms," *Burroughs Clearing House*, March, 1955.

This article brings out the hazards involved in today's long term (30 year or longer) mortgage loans. It portrays, by the use of charts, the relationship between amortization and depreciation and shows clearly the position the investor is in when depreciation occurs faster than amortization. It points out the need for very careful thinking by investment personnel regarding risk in relationship to amortization and depreciation.

The article gives suggested goals for conventional lenders who desire to successfully meet government competition and maintain their lending activity on a level consistent with their responsibilities as trustees of savings funds.