

DISCUSSION BY IRVING H. PLOTKIN*

I. Introduction

We are pleased to have this opportunity to reply to Mr. Bailey's well written review of Arthur D. Little, Inc.'s recent study¹ of property and liability insurance. Mr. Bailey raises several methodological questions in financial and welfare economics. We will address each of these questions in turn. While we disagree with several of the conclusions Mr. Bailey reaches with respect to economic methodology, we do not disagree with what is, perhaps, the primary, practical (non-theoretical) conclusion of the Bailey review. We agree that it is both interesting and useful to compare properly measured and adjusted return on net worth for stockholder owned insurance companies to the return on net worth experienced in other economic endeavors having similar risk characteristics.

Throughout the ADL research we have clearly stated that the questions we sought to answer were:

- 1.) Are insurance prices currently high because insurance profitability is, in any sense, excessive?

and

- 2.) Do present levels of insurance industry profitability offer any reasonable hope of price relief?

Performing comparative risk/return analysis based on several measures of financial return and of risk, we have concluded and plainly stated that the answers are "No." Mr. Bailey appears to feel that return on net worth is the only legitimate basis on which to answer these questions. However, in the present version of his paper he fails to address the questions and offers no answer based on his own or others' research. He does, however, misquote a rate of return ratio which ADL reported. Yet by alleging that one of the ADL measures "substantially" understated insurance return, Mr. Bailey, this

* Mr. Plotkin, a guest reviewer of Mr. Bailey's paper, is a senior economist with Arthur D. Little, Inc., management consultants of Cambridge, Massachusetts. He was the principal author of three recent ADL reports on profitability in property-liability insurance, one of which is the target of Mr. Bailey's paper.

¹ *Rates of Return in the Property and Liability Insurance Industry: 1955-1967*, June 1969. Copies are available from the National Association of Independent Insurers, Chicago, Illinois.

reviewer feels, appears to have a position on this discussion. All those concerned with the issue would be better served if that position were directly stated, supported, and then could be reviewed. Perhaps in his response Mr. Bailey will either state his answers to these questions or state his lack of a position with respect to them.

II. Bailey on Ratemaking

Before turning to Mr. Bailey's criticisms of the ADL report, we feel it is important to note the contribution Mr. Bailey's review has made to the growing discussion of the role of investment income in ratemaking. The issue Mr. Bailey addresses involves the inclusion or exclusion of investment income in the formulation of premium rates. ADL has not taken a position as to whether rates *should* be lowered by the direct inclusions of investment income in ratemaking formulas. However, Mr. Bailey appears to take a definite stand on this critical issue. In his review of current insurance practices, Mr. Bailey demonstrates that insurance premiums are lowered by the income generated through the company's investment of unearned premiums and loss reserves. He also discusses a return due to delayed loss payments.

Mr. Bailey observes, "The policyholders do receive a return on the funds they advance to an insurance company. They receive several returns. One return is lower rates" (p. 135). He indicates these returns correspond to ". . . the investment income from the assets that back up the reserves for unearned premiums and unpaid losses" (p. 136). Mr. Bailey also notes, "Although in many cases there is no specific discount for the advance payment of premiums, the price of insurance is lower than it would be if premiums were customarily paid at the end of the policy term or at the middle of the policy term" (p. 135). Mr. Bailey clearly believes that investment income is considered in determining the appropriate level of rates *even when it is not explicitly included in the rate determining formula.*

Mr. Bailey also indicates that any attempt to lower the amount of investment income accruing to a company must be offset by an equal increase in premiums. Mr. Bailey asks, "What would happen to an insurance company's profits if it operated without any funds advanced by policyholders?" (p. 139). He answers, if a company collected premiums continuously as they were earned "it would have to raise its rates slightly in order to offset the absence of investment income realized by competing insurance companies who collect premiums in advance" (p. 139).

Mr. Bailey's viewpoint on the ratemaking issue aligns him with those

who argue that investment income is already considered in premium rate decisions, although it is not explicitly included in most formulas. He argues that reducing the investment income accruing to the company must be compensated by raising premiums. I believe this position is also held by those who contend that investment income is considered in ratemaking.²

Mr. Bailey's discussion of ratemaking procedures is properly the subject for review by actuaries and not by an economist. Of course, Mr. Bailey's observations with respect to ratemaking underlie the rest of his arguments and conclusions with respect to the ADL profit formula.

As an economist I would note that Mr. Bailey's position is not supported by the literature or practice of national income accounting. In economic terminology, Mr. Bailey claims that property and liability insurers pay policyholders "implicit interest." The national income economists impute interest returns for several financial intermediaries but have decided that property and liability insurers do not require any such adjustment.

Dr. John A. Gorman, Associate Chief, National Income Division (U.S. Department of Commerce), has informed me that the only industries for which imputations are made are commercial banks, mutual savings banks, savings and loan associations, credit unions, regulated investment companies, life insurance companies, and uninsured pension plans.³ Dr. Gorman explained that no imputation is made for property and liability insurers. He agreed that from a social accounting sense measuring total income (as ADL did) as the sum of operating profits (underwriting income), interest and dividends received, realized capital gains, and unrealized capital gains captures all sources of income. Further such a measurement conforms to the general national income accounting canon that the measured output "not be affected by the ownership of the capital employed in producing the output."⁴ As we mention below, the ADL research purposefully strove to

² The complaints about high insurance premiums will not be alleviated by elongating the payment schedule, since the rates would have to be raised. Unless Mr. Bailey is willing to argue that current *total* insurance company profits ought to be reduced, then his analysis clearly shows that the only price relief offered by investment income is in the form of higher premiums and longer payment schedules!

³ See Gorman, J. A., "The Real Output of Financial Intermediaries," Tenth General Conference of the International Association for Research in Income and Wealth, Maynooth, Ireland, August 20-26, 1967, for a detailed discussion of this area of national income accounting.

⁴ Gorman, J. A., "Alternative Measures of the Real Output and Productivity of Commercial Banks," *Production and Productivity in the Service Industries*, V. R. Fuchs, ed., New York, 1969, National Bureau of Economic Research, p. 157.

obtain answers independent of the question of the ownership of assets or incomes. Yet much of Mr. Bailey's paper seems to be concerned with just such issues.

A central argument in insurance ratemaking today concerns the proper treatment of investment income. Some maintain that the investment earnings on policyholder-supplied funds (reserves) is not considered in rate-making and, therefore, rates are too high (see, for example, Gilbert Friedman in the September, 1969 issue of the *Atlantic*). Others, like Mr. Bailey, contend that these earnings are already fully reflected in insurance rates. Still others contend that the argument is of little consequence, for their calculations show that the investment income attributable to the policyholders is minimal. An increasing number of state legislatures and insurance departments appear to be siding with those who argue that present rate-making has failed to consider, even indirectly, investment income. They are passing laws which now require that investment income on reserves be considered in ratemaking. In some instances proposed rate filings were lowered at the request of insurance departments to account for investment income. In summary, the question of the actual or proper role of investment income does not appear to be settled in insurance literature or practice.

III. The Question of Bias

The ADL report did not take a stand on the proper or actual role of investment income. Rather it followed the national income practice (which is clear) and did not impute any interest payments in measuring the insurance industry's returns. Nor did it impute interest payments for any other industry in the study. Rather each industry's profitability was measured by the totality of (non-imputed) income generated by the total of its investable assets. This measure included all sources of profit, including the investment income earned on the reserves. (A later study measured and compared returns to net worth.)

Mr. Bailey's claim that our calculation is biased is not supported by those who have argued that investment income is excluded from ratemaking. Further his assertion that our measurement "substantially" understates the insurer's rate of return is refuted by studies (such as the one done by the late Mr. Sammy D. Sapp, of the Texas Insurance Department) which shows the minimal value of this income item.⁵

⁵ On page 137 of his review Mr. Bailey suggests that the 5% underwriting profit allowance "built into the rates" be added to the Net Income figure in the ADL calculation.

The question our economic analysis sought to answer was whether present industry profitability *could* offer price relief. Believing that part of the industry's profit already lowers prices, Mr. Bailey could view our analysis as answering the question, "Can present industry profitability offer *further* price relief?" Imputed interest would play no role in answering that question. In either case, the answer is clearly "No."

Mr. Bailey concludes his analysis of the alleged bias in the ADL formula by noting that companies which have greater ratios of writing to surplus or higher ratios of reserves to surplus (such as mutuals and reciprocals) are reported by ADL as showing lower returns than companies with lower writing and reserve ratios (stock companies). Careful analysis, however, will show that unfortunately it is not any bias inherent in the ADL formula which produces these results, but the inherent nature of the *present* insurance industry that causes companies who do more writing, and/or keep larger proportions of their assets in bonds, to earn lower rates of return. The data strongly suggest that this is due to underwriting being relatively unprofitable and bond investments yielding, in total, less than stock investments. Under such circumstances, we do not understand what Mr. Bailey means by "efficiently" when he states that insurance companies "use their resources most efficiently by maintaining the highest leverage of premiums and reserves to net worth" (p. 140). By such reasoning the buggy-whip maker who around 1910 channeled his resources into more plant and equipment rather than out of the buggy-whip industry would have been considered to be making the most efficient use of his resources. Likewise for the insurance investment manager who supplied this manufacturer with capital. As an economist I cannot agree with these propositions.

Mr. Bailey demonstrates that it is the inherent nature and structure of the insurance industry, and not any bias in the ADL formula, which places insurance returns at the bottom of all other industry returns. Mr. Bailey notes that a company which received premiums as earned, and paid losses as incurred, would have unchanged profits (its premiums, he maintains, would

It is difficult for us to understand why Mr. Bailey chooses this rather poor proxy for the imputed return to policyholders when he demonstrates but one page later a precise method for measuring the returns on these funds. It is unclear what, if any, justification Mr. Bailey has for using the 5% figure. It appears to be but an arbitrary choice for illustrative purposes; however, the reader is left with the feeling that Mr. Bailey assigns some special, actual significance to the fact that the 5% is a "profit allowance" and is "built into" the rates. We can find no real significance in it, nor in the 7% rate of return he estimates using it.

increase and its losses be reduced by an amount equal to the investment profit it used to earn under the old system). Mr. Bailey continues, "Such an insurance company would have no reserves for unearned premiums or unpaid losses. Its rate of return calculated by the formula used by the ADL report would be higher than the rate of return for a competing insurance company that collected annual premiums in advance . . ." (p. 139). Mr. Bailey elegantly shows his reader that leaving the numerator (net income) unchanged and lowering the denominator (invested funds) increases the value of the fraction (rate of return). We agree.

Mr. Bailey's example has also shown something more revealing. It should be recalled that the ADL report stated only that the present rate of return in the insurance industry appears to be low in certain senses. We did not state how this situation ought to be corrected. We did not say, for example, that profit (the numerator) should be raised or that invested funds (the denominator) should be lowered. All we said was that the way the insurance industry is *currently* run produces an unsatisfactory rate of return; unsatisfactory, that is, from the point of view of society. Mr. Bailey's example of changing the payments pattern and his remarks (p. 139) concerning "overcapitalization" shows how a fundamental, institutional change in the operations of the insurance industry is likely to produce a marked change in its rate of return. I have urged on numerous occasions that those who are seriously concerned with the problems of the insurance industry turn their sights to the basic institutions and structure of the insurance industry for it is through changes in those areas that relief may well be forthcoming. Juggling with profit and ratemaking formulas will produce no relief for the insurance consumer.

We conclude that Mr. Bailey's allegation of bias in our formula is untrue. His claim of implicit interest is rejected in the literature and practice of national income accounting and is not a settled issue in insurance. More importantly, for the questions we sought to answer, implicit interest plays no role and, therefore, could not introduce any bias. Our formula measures the return generated by *all* funds flowing into an insurance company. It neither penalizes nor rewards companies with larger reserves or higher premium to surplus ratios. If such companies show up as being less profitable, we suggest that it might be because their investments produce less income and/or they suffer higher underwriting losses. We believe that it is the inherent structure of present insurance operations and not accounting or actuarial phenomena which produce the current unsatisfactory rates of return in the industry. As will be seen in the next section, these conclu-

sions follow from an analysis of net worth as well as from our original, overall return analysis.

IV. *Return on Net Worth*

While we cannot accept his justifications, we can accept and do appreciate Mr. Bailey's desire to use what he calls "the only realistic alternative," the return on net worth, as a measure of comparable earnings between insurance companies and other industries. We feel the return on net worth measure is appropriate when discussing problems of insurance capacity and problems of stockholder owned insurance companies. However, in relying exclusively on this measure, Mr. Bailey leaves unanswered questions concerning the measurement of return on mutual and other non-stock insurance enterprises, the social reasons for measuring the efficiency of all assets employed as distinct from the efficiency of the employment of equity financed assets, and the effect of comparing industries with differing capital structures. How would the return to net worth measure be useful in these cases?

Even when using return on net worth as appropriate, we must emphasize one guiding principle in its use: the return on net worth for stock insurance companies must be compared with the return on net worth for other industrial or financial enterprises and, further, such comparisons must give due consideration to alternate employments of capital within a risk/return framework.

Most practitioners of financial analysis, as well as professors of finance and economics, regard the text *Security Analysis — Principles and Techniques*, by Graham, Dodd, and Cottle, as the Bible of security analysis. The entire viewpoint of the text is parochial in nature; that is, it offers advice to investors seeking the profitable employment of *their* funds. Yet, when they discuss profitability ratios, Graham and Dodd prefer to use the total return on invested funds rather than the return to net worth. The authors note:

"The best gauge of the success of an enterprise is the percentage earned on invested capital, i.e., on the long-term (non-current) debt and preferred stock plus the book value of the common stock. This percentage, or rate of return, is the ratio to total capital of the *final* net profit available for capital funds. Thus it reflects all recurrent items of profit and loss, including income tax, but not deducting interest on funded debt. The fundamental merit of return-on-invested-capital ratio is that it measures the *basic* or over-all performance of a

business in terms of the total funds provided by all long-term investors — rather than a single class.”⁶

The editors of *Forbes Magazine*, who report the return on equity figure, clearly indicate that this statistic measures only the efficiency with which corporations employ owners' funds and tell nothing about the corporation's total efficiency. They explain the net income to net worth measures as follows: “By comparing equity capital with net earnings, we are showing how efficiently management is managing *stockholders'* property.”⁷

Mr. Bailey claims that ADL calculated the return on net worth for all types of insurance companies. He quotes our figures for return on Policyholders' Surplus, and identifies them as the ADL-calculated values for return on Net Worth. It is inaccurate to say that we in any way implied that our *N4/D1* measure (Net Income/Policyholders' Surplus) was a measure of return on net worth. Adjustments must be made to these figures to cast them as return on net worth. We will discuss these adjustments below.

Before turning to that we note that one of the principal reasons ADL undertook the study reviewed by Mr. Bailey was to expand our profitability results from just the stock insurers to the total industry. We are puzzled how Mr. Bailey is able to discuss a rate of return on net worth of mutual insurance companies. While we have always maintained that return on net worth is a meaningful figure in analyzing the capital market's reaction to — and the capacity problems of — stock insurance companies, we have seen no analysis either on Mr. Bailey's or anyone else's part that this is meaningful for the mutual segment of the industry. This was one of the reasons that caused us to favor the social measure of return, total earnings over total funds employed. The only place in our report where we discuss returns to net worth we do so for “*the purpose of [an] analogy*” (p. 13, emphasis in the original) involving private investors. While we appreciate Mr. Bailey's desire to make use of rate of return on net worth, we believe he must present both the reasons and framework for using such a measure. This is especially true in the case of mutual insurance companies. In our reports and papers we have always been most careful to present such necessary information.

⁶ B. Graham, D. L. Dodd, and S. Cottle, *Security Analysis — Principles and Techniques*, McGraw-Hill Book Company, Inc., New York, 1962, Fourth Edition, pp. 233-234.

⁷ *Forbes*, Jan. 1, 1969, p. 37, emphasis added.

The adjustment for the effect of the cash/accrual distortion involves adding different quantities to both numerator and denominator of the $N4/D1$ measure. While it is clear that a larger quantity is added to $D1$ than is added to $N4$, the relative proportions are difficult to derive from abstract reasoning.⁸ Our results for the past 14 years show that the denominator is increased proportionately more than the numerator — the ratio is lower by this adjustment.

Owing to the growing interest in return on net worth of insurers and its effect on insurance capacity ADL has prepared measures of this financial statistic for stock insurers. These data were presented to Senator Hart's Antitrust and Monopoly Subcommittee on November 25, 1969.

ADL has adjusted the $N4/D1$ measure for stock insurers to yield a rate of return on net worth. We parameterized our adjustment by using values of .30, .35, and .40 for F in the following formulas:

$$N6 = N4 + F \cdot (\text{change in unearned premium reserve})$$

$$D3 = D1 + F \cdot (\text{unearned premium reserve})$$

We have also adjusted $N6$ to reflect a 25% allowance for taxes on its unrealized capital gains portion. Preliminary calculations place return to net worth, $N6/D3$ (where both net income and net worth have been adjusted to reflect income and equity in the reserve accounts), between 6% and 7% for stock insurers for the period 1955-1968. That is, they lower the returns from those calculated for $N4/D1$.

We must now ask with what should these returns be compared. Clearly, they must be compared to returns to net worth of other enterprises. Also, we must be sure that they are compared with enterprises having similar risk characteristics, this time from the point of view not of society, but of the suppliers of equity funds. An all-industry average rate of return on net worth for the same period was about 12.5%; however, none of the industries we measured showed such extreme fluctuations in rate of return as characterized the rates of return of the insurance industry. (Our report to the National Association of Independent Insurers presents some of these data.)

⁸ This adjustment is *not* analogous to the one we discussed for unrealized capital gains. (See Arthur D. Little, Inc., *Replies to Criticisms of the ADL Report "Prices and Profits in the Property and Liability Insurance Industry."*) In that case we maintained that the effect of our using unrealized capital gains over the 13-year period, was essentially to add the same quantity to both numerator and denominator of the insurance industry's rate of return formula, thus raising the reported return.

We found that the closest risk equivalent investment from a *stockholder's* point of view is investment in the stock market, either through mutual funds or direct purchases of individual securities. This investment, however, must be calculated as a margined or leveraged investment to be comparable with investing directly in an insurance company.⁹ The average return for comparable types of stock market, margined investments was about 20% on net worth for the period.

V. Economic Efficiency and Financial Intermediaries

Mr. Bailey suggests that since financial intermediaries are not users of real capital such as plant and equipment and since part of their funds are supplied by the customers, the measurement of rate of return based on total investable funds does not reflect the "real" return to these institutions. In essence his argument implies that society is not concerned with the efficient employment of the economic resources of these intermediaries. He asks "are the funds advanced by policyholders invested in the insurance enterprise?" (p. 137). His conclusion that these funds are not invested in the insurance industry is predicated on the following points:

1. "Policyholders do not intend to invest in the insurance company when they pay their premiums" (p. 137).
2. Insurance companies hold securities issued by other industries.

The first point is inconsistent with his previous statements. Mr. Bailey first states, "If all the insurance companies' assets were obtained from owners or lenders, the rates of return could be measured by the same formula used for other industries" (p. 134). Later, Mr. Bailey is no longer concerned with the sources of these funds but with the nature of the assets. Mr. Bailey implies that to demand a reasonable rate of return on the insurance companies' assets is the equivalent of placing the assets in double jeopardy.

On the basis of his two points, Mr. Bailey draws an analogy between the insurance policyholders and bank depositors. He points out that bank depositors do not make conscious investment decisions and that banks hold securities issued by other industries. Mr. Bailey similarly draws an analogy between the reserves for unearned premiums and unpaid losses advanced by policyholders, and the deposit liabilities of a bank. We agree, they are analogous.

⁹ By "directly" we mean, not by buying an insurance company's stock, but by putting capital into a new or on-going insurance operation.

He continues by stating flatly, "Deposits are omitted from the calculation of the rate of return for the banking industry" (p. 138). *On the basis of this assertion*, he concludes his analogy by arguing the reserves "should not be included in the measurement of the rate of return on the insurance enterprise" (p. 138).

We feel Mr. Bailey's analogy between the insurance and banking industries is appropriate. We used a similar analogy between these two financial intermediaries when concentrating on this problem of capital investment. Our analogy is presented in a paper in the *Journal of Risk and Insurance*. We stated:

"On the contrary, insurance policies are examples of conditional promises to pay (debts) and demand deposits are examples of unconditional promises to repay persons who in essence provide debt capital. The capital they provide contributes to the long-term, permanently investable funds in the operations of these financial intermediaries. *From society's point of view, there is an opportunity cost for the monies being channeled into the insurance industry through the purchase of insurance policies, as there is an opportunity cost for the monies channeled into the banking and other non-bank financial intermediaries. An evaluation of the overall efficiency of capital employment requires viewing the total permanently invested assets in any of the industries compared.* It is for these reasons that the two major reserve accounts are included as sources of permanently invested funds in the insurance enterprise.

"By analogizing them with debt money suppliers, it is not meant to imply that the policyholders or depositors of a bank are making conscious investments in those operations. Rather, it is suggested that, in effect, their purchasing of the insurance product or the banking product channels investable funds into the respective industries. Clearly it would be inappropriate to compare the rates of return on merely the equity portion of the insurance or banking industry with the rates of return of the total capitalization of other industries."¹⁰

Mr. Bailey apparently does not appreciate the important role financial intermediaries perform in the efficient allocation of economic resources. He

¹⁰ Irving H. Plotkin, "Rate of Return in the Property and Liability Insurance Industry: A Comparative Analysis," *Journal of Risk and Insurance*, June 1969, Vol. 36, p. 184, emphasis added.

intimates that the rate of return earned by an insurance company when investing its policyholders' or stockholders' funds is of no consequence. Mr. Bailey creates a paradox with this argument. Earlier he states that the reduced premiums enjoyed by policyholders "are offset by the investment income from the assets that back up the reserves for unearned premiums and unpaid losses" (p. 136). Mr. Bailey demonstrates that if insurance companies earned less on their reserves, policyholders would be forced to pay higher premiums and/or receive lower loss settlements. Clearly, Mr. Bailey must believe that the return on reserves is of consequence at least to policyholders.

Mr. Bailey's concern about the nature of insurance company assets may stem from his remembering some of the principles generally taught in basic economics courses. These principles concern the fact that in measuring national income, gross national product, or other measures of wealth and production, one distinguishes between real, tangible assets, and nominal or financial assets. These principles are true enough. However, some teachers and students of economics have been too quick to generalize the concepts of our highly arbitrary system of national income accounting into their discussions of more general, social-economic problems. As Professors John Gurley and Edward Shaw point out in their seminal work, *Money in a Theory of Finance*, economists have been guilty of such carelessness:

"Preoccupation with national income and product accounts, which largely ignore financial transactions, may have led too many economists to consolidate financial accounts out of economics, relegating financial analysis to its own lonely and sometimes not very fruitful course of development. Because part or all of finance is commonly aggregated or netted out of economic analysis, economists may inadvertently have given too little weight to the bearing of finance on economic activity."¹¹

Gurley and Shaw then present a 350-page description of the critical role played by financial intermediaries in the overall economic development and capital allocation processes of both advanced and developing economies. Their work is now a part of the ever-expanding economic literature discussing the critical role bank and non-bank financial intermediaries play in all aspects of "real" economics. The literature presents many theoretical formulations, institutional analyses, and econometric results, all demonstrating this

¹¹ John G. Gurley and Edward S. Shaw, *Money in a Theory of Finance*, Brookings Institution, Washington, D.C., 1960, p. 20.

important role. So, while Mr. Bailey's concern is perfectly understandable, especially in light of the early errors made by some members of the economics profession, his conclusions with respect to the importance of efficiently operated financial intermediaries, and the possible double jeopardy in which their funds are placed, are not substantiated either by economic theory or practice.

Let us, however, address Mr. Bailey's specific unsupported and unrefereed statement, "Deposits are omitted from the calculation of the rate of return for the banking industry" (p. 138). We must ask, by whom are they omitted? Our research shows that apparently they are omitted only by Mr. Bailey. His assertion (critical for his conclusion about insurance returns) concerning the rate of return measurements of the banking industry flies in the face of the current body of economic and regulatory literature.

The measurements of the economic efficiency of the banking industry include ratios of the rate of return to total assets. Total assets are, of course, equivalent to the sum of net worth plus deposits.

Working on behalf of the Federal Reserve Bank of Kansas City, the noted financial economist, Dr. Lyle E. Gramley, studied the economic efficiency of Tenth District member banks in the period 1956-1959. The purpose of his study was to guide banking regulators in making decisions in the public interest. In his landmark work, Gramley assesses the efficiency of the Tenth District member banks measuring "the effect of size on ratios of net current earnings to assets."¹² Clearly, Dr. Gramley believes that from a social-economic standpoint the efficiency of the banking industry must be measured by the yardstick of rate of return to total assets. In other words, he feels that a meaningful measurement of return must be based not only on net worth, but also on bank deposits.

Each year the Federal Deposit Insurance Corporation (FDIC) publishes, in a statistical supplement to its annual report, the rates of return of the banking industry on total assets as well as on net worth. We may infer from the inclusion of both statistics that neither is sufficient and that both are important, at least to the agency established by Congress to insure the efficient and safe operation of the American banking system.

The fact that these statistics are collected and published by the FDIC and are employed by both scholars and regulators demonstrates the impor-

¹² Lyle E. Gramley, *Scale Economies in Banking*, Federal Reserve Bank of Kansas City, 1962, p. 37.

tance of rates of return based on total assets. We conclude that deposits are *not* omitted from the calculation of rate of return for the banking industry as Mr. Bailey would lead us to believe, because they are important measures of economic efficiency. Likewise, reserves ought not be excluded from other than parochial calculations of returns for the insurance industry.

VI. Concluding Remarks

Mr. Bailey concludes his review by stating that one of the ADL measures "substantially" understates the rates of return for the insurance industry. While he does not say to what extent they are understated, we wonder what Mr. Bailey's position is with respect to the issue of the level of industry profitability. We conducted our studies in order to address that very issue. Our studies found that no matter how measured, the insurance industry returns very poor levels of profitability. On several occasions we have noted that our study was not an academic exercise but an attempt to obtain explanations of real world phenomena.

The formation of more than 350 holding companies by insurance companies, the diversification into mutual funds, purchases of credit card companies, etc., are some of the signs of capital unrest in the insurance industry. In addition, some large corporations and holding companies have bought up insurance company stocks for the *announced* purpose of gaining control and then withdrawing large amounts of funds from the insurance industry. Mr. Bailey cites such actions on page 139 of his paper. In its *October Review*, the A. M. Best Company notes that the effect of three recent financial moves was to withdraw about one billion dollars from the industry's underwriting capacity.¹³ If the insurance industry is profitably employing funds, why have funds been channeled out of the industry by these investors?

I submit that all analyses and models concerning real problems are subject to the ultimate test of validity and value — their ability to predict and explain real world phenomena. We feel that the ADL report passes this test. We have pointed out above the technical deficiencies in Mr. Bailey's criticisms. The principal finding of the ADL study was that current insurance operations yield unsatisfactory returns on their funds. Nothing in Mr. Bailey's review contradicts that conclusion. In fact, Mr. Bailey himself presents real world evidence of dissatisfaction with insurance returns when he discusses the withdrawals of capital undertaken by holding companies.

¹³ *Best's Review*, Property Liability Edition, October 1969, p. 5.

It is time, I believe, that we stopped trying to define the ultimate, academic measure of insurance profitability and concentrate instead on finding solutions for the industry's basic problems. For example, the simultaneous effect of capital levels on capacity, return, and solvency is an important and uninvestigated area. I sincerely hope that the Fellows of the Casualty Actuarial Society will be in the forefront of those who offer constructive and realistic solutions to this country's nettlesome insurance problems.

AUTHOR'S REPLY TO DISCUSSION

Definition of the Problem

In a review of the Arthur D. Little Report on Rates of Return in the Property and Liability Insurance Industry which was presented to the Casualty Actuarial Society November 16, 1969 at Atlanta, Georgia, I showed that the ADL formula omitted a substantial part of the total return for the insurance industry and that the rate of return, 3.6%, produced by the formula was therefore substantially understated.

In a lengthy reply, which was twice as long as my review, Dr. Irving H. Plotkin of Arthur D. Little, Inc., only skirted the fundamental issue raised by my paper and did not answer it. Dr. Plotkin raised various issues such as whether insurance rates should be reduced by the direct inclusion of investment income in ratemaking formulas used to justify rate filings, the question of ownership of assets and incomes of insurers, the problems of comparisons of returns on net worth, and the withdrawal of assets from insurers by holding companies. He concludes with the sweeping statement, "It is time, I believe, that we stopped trying to define the ultimate, academic measure of insurance profitability and concentrate instead on finding solutions for the industry's basic problems."

The ADL reports were presented as among the most comprehensive, scholarly attempts ever undertaken to define and measure insurance profitability. ADL restricted itself entirely to the measurement and analysis of the facts and refrained from proposing how the situation ought to be corrected. But now that there is some doubt about the validity of ADL's methodology and formulas, Dr. Plotkin wants to get away from the nitty gritty of defining the problem and instead wants to assume that we all know what the problem is. However, ADL continues to publicize its 3.6% figure.

Defining a problem is half of its solution. A faulty definition only makes