

Insurers Investment	1. \$10,258,534,000
in Common Stock	2. \$12,259,015,000
Expected Return on	1. 12.16%
Common Stock	2. 10.00%
(dividends plus	3. 8.00%
appreciation)	

The critical ratios on the basis of these assumptions are shown in Table 1 of this review. Neither the variables nor the assumed values for them are exhaustive but the results in Table 1 range from 101.4 to 105.0 indicating that there is no one critical ratio for the industry or a company but a set of ratios based on underlying assumptions and not necessarily restricted to those employed in this review. Balcarek did not explore this form of sensitivity analysis which would have greatly improved his paper and discouraged possible misinterpretation of his results.

TABLE 1  
*Critical Ratios of Adjusted  
Underwriting Results to Earned Premiums*

	Insurers' Investment in Common Stock <sup>a</sup>					
	\$10,258,534			\$12,259,015		
	Expected Return			Expected Return		
Liquidation Value <sup>a</sup>	12.16%	10 %	8%	12.16%	10 %	8%
\$12,558,496	101.4 <sup>b</sup>	101.8	102.2	103.3	103.3	103.3
\$11,138,699	103.2	103.4	103.7	105.0	104.7	104.4

<sup>a</sup> 000 omitted.

<sup>b</sup> Balcarek's critical ratio.

#### DISCUSSION BY W. J. MACGINNITIE

Mr. Balcarek has made another contribution to the growing literature on the relationship between investment income and underwriting results. There are many ways of looking at this relationship, and Balcarek's may prove useful to some actuaries in analyzing the profitability of a company or companies over time.

There are some difficulties with the method, however, and it should be applied with care. First of these is the omission of federal income taxes. While tax rates may vary from company to company and from time to time, they are an important consideration in investment strategy and should be included in any comparison of alternative returns.

In Balcarek's example, for instance, application of the tax rates in the situation of a typical stock agency company would render the insurance business more profitable than the investment trust.<sup>1</sup> Another place where federal income taxes should be recognized is in the conversion of equity in the unearned premium reserve into surplus. Taxes will be assessed at the ordinary income rate at the time of that conversion. (The assessment could take the form of reducing an otherwise available tax loss carryforward.)

A second difficulty with the method is that it is really only applicable to certain steady-state situations. Rate of change in the size of an insurer's liabilities can result in misleading conclusions from a method that uses calendar period data. If an insurer is growing at a very rapid rate, for instance, the investment income earned in the current calendar year may be much less than the discounted future value of investment income on reserves generated by the current year's underwriting activities. Balcarek's static model may then show that he is unprofitable when in fact he has only chosen to forego current income in order to receive future income that has a greater present value.

Balcarek uses his approach to show the current lack of profitability in the insurance business. Unfortunately, he has chosen a data source (the New York Statistical Tables) that leaves much to be desired. Data for companies licensed in New York is biased, in that it excludes a significant number of companies and/or subsidiaries that have chosen to stay out of New York. More seriously, however, the totals include both parent and subsidiary in the capital and surplus account, and they include intra-corporate dividends in the investment account. This results in a significant over-

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<sup>1</sup> Assuming an effective tax rate of:

- a. 20% on bond interest, due to a high proportion of tax-exempts,
- b. 7½% on dividends,
- c. 50% on other investment income,
- d. 20% (25%, discounted from the future date of realization) on capital gains,
- e. 50% on underwriting profits.

and that the investment trust pays taxes as an ordinary business corporation, not as an investment company under the 1940 act.

statement of stockholders' equity<sup>2</sup> and a lesser overstatement of investment income.<sup>3</sup> An alternative data source is hard to find however, and it may be that someone will have to assemble a large pile of convention blanks and annual reports to shareholders and start turning out truly consolidated statements.

Another point to be noted about the New York Statistical Tables is that they include the stock subsidiaries of certain mutual companies, which Balcarek tried to exclude.

Balcarek's method correctly matches assets to liabilities, particularly common stocks with surplus. Some recent papers have used an average return on the total portfolio, which is just not in accord with the real world, either regulatory or management. The fact is that most insurers keep their surplus in common stocks and their liabilities in bonds, cash, and receivables.

Having pointed out the significant distortions in Balcarek's data base, one must say that his conclusions about the profitability of insurance remain unproven. Better data might prove him right; it might not. But the fact is that significant structural changes are taking place in the industry, apparently in part because some people *believe* that the business is not profitable. Three observations seem pertinent:

1. Casualty actuaries have not yet done an adequate job of exploring the technical aspects of the relationship between investment income and underwriting. Balcarek's paper is another contribution to our evolving knowledge.
2. Return on equity increases if equity is decreased relative to premium volume, assuming that underwriting income plus associated investment income is positive. Perhaps one of the causes of the industry's problem is that many companies are overcapitalized.
3. Balcarek did not investigate the dispersion of returns by company, but it could be observed that some carriers are earning rather handsome returns. Perhaps we are witnessing another chapter in the shift of market share to the more efficient competitors.

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<sup>2</sup> A rough check indicated to this reviewer that the stockholders' equity was overstated by at least 10%, and possibly considerably more.

<sup>3</sup> This resulted in a big increase in 1966 dividends on common stock when one fleet paid large intercorporate dividends.

Finally, it should be noted that some writers in the field of capital budgeting have moved away from internal rates of return, and started to explore external ones. For a stock company, the external return is the one that a stockholder receives, which is normally his dividend plus the appreciation in the value of the stock. So as if there aren't enough problems with the internal return, actuaries may soon have to turn their attention to the ticker tape.

#### AUTHOR'S REVIEW OF DISCUSSIONS

I greatly appreciate the detailed reviews of my paper. They produced a number of interesting questions, some of which may merit additional discussion.

Professor Ferrari points out that during the liquidation of the insurer's assets, the book values of bond portfolios and equities in unearned premiums may not be realized. This, according to him, would reduce the assets of the investments fund and raise the critical ratio. I am not fully in accord with his reasoning. Granted that the book value of bonds is not a market value as they consist of largely fictional values depending on the purchase price of the bond, its due date, and its face value. It is very likely that these values are overstated due to the fact that bond prices have been falling for some years. It follows that the insurers' surplus is overstated and what is much more important, their actual earnings have been overstated. The exact figures are not available. However, if we consider the average drop in bond prices as shown by the various indices and apply it to the bond portfolios, then it would be apparent that this would make the comparison worse for the insurers.

One can also speculate that the equity in unearned premium reserve is overstated. This will happen in the following circumstances:

- (1) If the insurer abandons his insurance operations by means of policy cancellations. Professor Ferrari seems to assume that this will be the actual course of action. In reality, there are some more rational alternatives available.
- (2) If the book of business is of such a poor quality that the prospective loss ratios would wipe out at least a part of the equity. This alternative means that in our comparison we again overstated the earnings of the insurers.