the subscribed and unpaid capital also enters into the proposition.) Where the two companies under consideration have different reserve bases, one valuing on, say, the 3½ per cent. basis, and the other on the 3 per cent., the worth of the ratio is altogether vitiated—but as a matter of fact the ratio has little or no value for comparative purposes under the best of conditions. Take, e.g., any one company. At the outset it may sell its capital stock at a high premium and value its business in force on the lowest basis allowed by the government. Its showing in either of the above ratios will temporarily be very good. Of course, if it pays out all the premium on the sale of capital stock in excessive commissions on its sale, has other huge organization expenses, and writes a costly new business, the reverse will be the case. When this company gets a little older, it may decide to carry the full reserve, dispensing with the modification allowed by the government on new business. It may also begin paying dividends on its quinquennial and annual dividend business, or writing a greater proportion of non-participating or low-priced insurance. The ratios as above will then be considerably lowered. If it retains a large margin of surplus, however, or writes a large proportion of deferred dividend business, and decides not to push too energetically for new business, it may, of course, show higher ratios herein than a more progressive company, especially if the latter company is paying liberal profits to policyholders as they are earned.

Some Other Considerations.

(5) (a) Surplus to assets; (b) surplus to liabilities. Both these ratios generally indicate a sound position, but have much the same defects for comparative purposes as the two mentioned under (4) above. One feature which might affect the ratio considerably is the amount of contingent reserve which a company has transferred from the surplus. The practice of companies differ very greatly sometimes in this respect.

It is perhaps needless to say that the net assets should be taken. The ratio of a company might be considerably altered were no consideration given to a heavy bank overdraft, due and unpaid claims, etc., appearing in the liabilities.

Old Companies' Ratio.

(B) "Old Companies'" Ratios.

(1) (a) Expenses to premium income; (b) expenses to total income; (c) expenses to insurance in force. Expense ratios are favorites of the old companies, and they present them in peculiar lights and weird colors. "When other helpers fail and comforts flee," the old company falls back on some tricky expense rate, and it would be difficult to find one not too poor to do them reverence. They are indeed ticklish items that require careful and delicate handling. No other ratios lend themselves so readily to unfair deductions; no other ratios contain so many lurking fallacies. It is well-nigh impossible to obtain an absolutely fair comparison of the expense ratios of companies, as they are affected so readily and in such a pronounced way by the various peculiarities of the business of each company. The three mentioned above are the ones most generally used. It is obvious at once from a consideration of the great proportionate cost of new business that the company doing the largest proportion of new business to old business will, in all probability, show the highest ratio of expenses to premium income. The ratio then is a tax on the young company, or in the comparison of companies of equal age and size upon the more progressive one. Where the total income is used, the ratio is even more unfair, for we now introduce the large interest income of the old companies upon which the expense is negligible as compared with that upon the collection of premiums.

What Figures Show.

It is easy to show by figures how a young company, getting its business actually cheaper than an old company, can yet be made to appear to be obtaining it at a greater proportionate cost.

Assume Company A has business in force December, 1913, $150,000,000.

	Income in year 1914.
Premium income on old business	$ 7,500,000
Interest income	2,500,000
Premium income on new business	500,000
Total income	$10,500,000

Its expenses are 15 per cent. of premiums on old business, and 100 per cent. of premiums on new business.

15 per cent. of $7,500,000 is	$1,125,000
100 per cent. of $ 500,000 is	500,000
Total expenses	$1,625,000

Ratio of expense to income $\frac{\$\ 1,625,000}{\$10,500,000}$ = 15.5 per cent.

Now take a smaller Company B, which has business in force, December 31, 1914, $10,000,000.

	Income in year 1914.
Premium income on old business	$400,000
Interest income	125,000
Premium income on new business	100,000
Total income	$625,000

Its expenses are 10 per cent. of premiums on old business, and 90 per cent. of premiums on new business.

10 per cent. of $400,000 is	$ 40,000
90 per cent. of $100,000 is	90,000
Total expenses	$130,000

Ratio of expense to income $\frac{\$130,000}{\$625,000}$ = 20.8 per cent.

Thus, on the surface it appears that company B is run more expensively than company A, because its expense ratio is 20.8 per cent., while A's expense ratio is only 15.5 per cent. As a matter of fact, however, company B would be by long odds the better company in which the policyholder could invest, for while he would be charged 100 per cent. for expenses on his first premium in company A, he would be charged only 90 per cent. in company; B while he would be charged 15 per cent. for expenses on each subsequent premium paid in company A, he would be charged only 10 per cent. for expenses on subsequent premiums in company B.

Percentages Vary.

It is sometimes argued that the old company with much paid-up business on its books will suffer in these expense comparisons owing to the income being smaller on that account. But its expenses on such business are also practically nil, so that little effect on the expense-income ratio is caused thereby. Indeed, where the ratio expense to business in force is used, the more paid-up business there is with its negligible expense, the lower will be the ratio. In this latter ratio, the kind of business written would also be important, for a company writing chiefly endowment insurance might make a very poor showing in comparison with a company whose business consisted largely of term or ordinary life insurance.

The only logical ratio for expenses is to find the total cost of new business to new premiums and of renewal business to renewal premiums. But no statistician or expert can say just what the total cost of new or renewal business has been even in his own company, much less for another company. He has to apportion arbitrarily such items as advertising, printing, administration expense, telegraph, postage, etc. The proportion of such expense applicable to new business necessarily varies in different cases and accordingly cannot be honestly expressed by any fixed percentage of total expenditure, and therefore no attempt to do so should be made.

(2) (a) Assets per M. assured; (b) surplus per M. assured; (c) surplus earned per M. assured; (d) reserves to insurance in force. It is so obvious at a glance that any one of these ratios favors the older and larger company that no comment on the fallacy, or rather rank injustice, of using them in a comparison of a young with an old company, need be made. For companies of approximately equal ages and sizes, the ratios can perhaps be used, but subject to many qualifications. For example, the rate of progression of the company is to be considered. The proportion of the plans of insurance would be important, the endowment plans with their large accumulations contributing greatly to assets, surplus and reserves. A large proportion of deferred dividend business would help (a), (b) and (c), meaning as it does larger accumulations, while a great proportion of annual dividend or non-participating business would lower these ratios. In the case of (b) and (d) the reserve basis is, of course, all important. If different bases are used, it is futile to make a comparison.