Letters

TIAA-CREF Response

I. J. Solomon and S. Katz of IIT Research Institute (Letters, 11 Feb., p. 581) quote an article about CREF (College Retirement Equities Fund) that based its conclusions about CREF's investment results on one selected time period. That article on CREF assumed a particular cash payment on one specific date and then valued it on one specific later date. In no way does this represent how CREF operates for its participants. However, taking their "in on one date, out on another" method, up-to-date figures are given in Table 1.

CREF is part of a retirement system. Participants enter at different times, make their contributions, along with those of the college, over many months and years and participate in CREF's broadly diversified common stock portfolio. At retirement there is merely a change from a gradual pay-in to a gradual pay-out, with participation in CREF's investment experience continuing for life.

At this point it should be emphasized that none of the TIAA-CREF income options for retirement "liquidate the annuitant's estate after 10 years" as Solomon and Katz state. Instead, all of the options continue income for the annuitant's lifetime, no matter how long this may be. And all but one of the options provide for continuation of benefits to a beneficiary or estate.

When Solomon and Katz compare TIAA (Teachers Insurance and Annuity Association) to a passbook savings bank, they compare apples and oranges. Both are nourishing, but there *are* differences. As a pension fund, TIAA makes guarantees that extend 30 to 50 years into the future; passbook accounts do not, nor do they provide pension administration, actuarial services, life income options, monthly checks for life, continuing payments to beneficiaries, and so on.

Table 1. Percentage change, CREF Accumulation Unit and Standard and Poor's Composite Price Index of 500 Stocks (*1*). Time periods are from 31 December to 31 December of given years.

Time period	Standard and Poor's 500 (%)	CREF (%)
1970–71	+ 10.8	+ 17.9
1966–71	+ 27.1	+ 27.2
1961–71	+ 42.7	+ 45.0
1956–71	+ 118.7	+ 140.8
1952–71	+ 284.2	+ 339.3

In their look at TIAA investment experience, Solomon and Katz not only compare savings and loan association "apples" with pension plan "oranges" but they choose just one period, 1953 to 1971, and conclude that savings and loan associations had a fraction of 1 percent edge by the end of that period. It might have been helpful to the reader if they had added today's rates of 7 percent for TIAA and 5.3 percent for savings and loan associations.

Solomon and Katz omit a very important element from their comparison —taxes. Passbook interest is taxable to the individual as current income in the year it is earned. Investment earnings in a pension fund, on the other hand, are tax-deferred and therefore stay in the fund to accumulate without tax erosion. Any comparison of accumulating funds should acknowledge the financial effect of this difference.

Solomon and Katz then shift their example from savings accounts to bonds, and argue that they could obtain a retirement income nearly as large as from a TIAA annuity, if the pension plan accumulation ($100,000 in their example) were liquidated and reinvested for them at current interest rates in high-grade bonds (7.6 percent in November 1971; 7.36 percent in December 1971). They overlook the fact that federal pension laws do not permit pension plans to preserve a retired person's accumulation intact for his estate, as Solomon and Katz suggest, and they overlook the effect the Internal Revenue Code would have on the liquidation they suggest. If a pension accumulation were liquidated and reinvested for the annuitant, whether in a bond account in his name or in a trust for his survivors, it would be fully taxable to him as income in the year of liquidation. When a pension accumulation is paid out as an annuity income, however, the tax is spread throughout retirement. So the results of liquidation and reinvestment would not be quite what Solomon and Katz say.

For their comparison with bonds, Solomon and Katz pick the TIAA income option that pays the least in monthly income (full lifetime income for husband and wife with a minimum of 10 years of payment). Table 2 shows all the annuity income options available from a $100,000 TIAA accumulation at current rates and dividends for a man aged 65 (wife aged 61). As mentioned previously, all options provide a *lifetime* income for the participant and all but the first provide additional guarantees for beneficiaries.

Compare the figures in Table 2 with the $5320 yearly income payable from a 7.6 percent AA bond purchased with the $70,000 after-tax value of a cashed-out annuity accumulation of $100,000 (which assumes the federal tax bite is only 30 percent). The TIAA annuity incomes are substantially higher than the bond income not only because of the difference in tax treatment but also because each annuity payment includes part of the principal as well as earnings, whereas a bond account, if left untouched, would keep the principal intact for the owner's estate.

The bond income of $5320 a year is a good deal less than the $7600 Solomon and Katz get by multiplying the November bond yield by $100,000. Furthermore, they do not point out that bonds are callable. A decline in interest rates during retirement could result in a call of the bonds, leaving the retired person or his widow with new investment decisions to make, and at lower yields.

The income from the bonds and also all of the TIAA incomes in Table 2 (noncontributory plan) would be includable in taxable income each year during retirement.

Table 2. Annuity income options available from a $100,000 TIAA accumulation at current rates and dividends for a man aged 65 (wife aged 61).

Income options	Yearly income ($)
Single life annuity	10,700
Life income with 10-year minimum	10,025
Life income with 20-year minimum	8,767
Life income with refund minimum	9,421
Joint life incomes with 10-year minimum	
With two-third benefit to survivor	9,130
With full benefit to survivor	8,271
With half benefit to survivor	9,330

We now come to the question of why pension plans do not pay their accumulated funds to retirees in a single sum. The main reason corporations and institutions throughout the country—whether commercial or nonprofit, public or private—do not make lump-sum settlements of accumulated benefits upon retirement is the conviction that their pension obligation to a retired employee lasts as long as the employee does, and that their pension plan must therefore pay the maximum possible *lifetime* income—an income that retired employees cannot outlive or lose through poor investments or incapacity in old age.

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Reference

1. *Standard and Poor's Trade and Securities Statistics, Security Price Index Record* (Standard and Poor, New York, 1970), pp. 167–184; *Standard and Poor's Trade and Securities Statistics, Security and Price Index Record, Current Statistics Supplement* (Standard and Poor, New York, Jan. 1972), pp. 50–51.

Ph.D.'s with Husbands

Susan M. Ervin-Tripp (Letters, 24 Dec., p. 1281) describes a recipe for determining whether the hiring of Ph.D.'s discriminates against women: ". . . multiply by .91 [the percentage of women with doctorates working in the last decade . . .] the percentage of Ph.D.'s that were given to women scientists in the top five departments in each field. . . ." Unless an institution or department has the resulting percentage of women at each rank it doesn't qualify as discrimination-free.

This hypothesis has much to recommend it, and Ervin-Tripp in all likelihood has stated a suitable zeroth-order approximation to the problem. Unfortunately she has neglected several first and second order corrections that may be comparable in magnitude to the term she cites. Her proposal actually gives an upper bound which may be several times larger than a true nondiscriminatory level of employment and which might mislead some into practices that discriminate seriously against men.

The corrections are necessary because Ervin-Tripp makes the implicit assumption that for the purposes of employment the mobility of women is identical to that of men. This may be reasonably valid for unmarried women. However, marriage places a constraint on the mobility of both men and women and limits their joint opportunities for careers, the limitation being more severe if they elect to live in a small, nondiversified community. For the sake of simplifying the analysis, let us divide the married women into two fractions, f_l and f_e, liberated and enslaved, depending on whether the woman or her husband determines where they both live.

In these terms, the percentage calculated by Ervin-Tripp's formula should be multiplied by the quantity

$$Q = [F_u + F_m (f_l + f_e P_h)] \quad (1)$$

in which F_u and F_m are the fractions of women with Ph.D.'s who are unmarried and married. The quantity P_h is the probability of an enslaved, married woman Ph.D. having a husband whose work takes them to a community that has an academic position suitable to her talents.

Insofar as I know, there have been no very detailed studies of what governs P_h, or of its impact upon the employment of women Ph.D.'s. However, for those in a large metropolitan area one would expect P_h to be larger than for a smaller, college-dominated town. My limited experience with employment of women Ph.D.'s on our faculty and with the placement of our own graduates leads me to believe that the effective value of P_h for an institution and community such as ours may be as small as ⅕ in some disciplines. In Eq. 1, F_u and f_l are substantially less than ¼, so to a good approximation, $Q \simeq P_h$. Therefore, the Ervin-Tripp approach overestimates the nondiscriminatory level of academic employment of women Ph.D.'s by the factor $1/P_h$, which may be severalfold.

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Special Virus Cancer Program

Nicholas Wade's report on the Special Virus Cancer Program (SVCP) at the National Cancer Institute (News and Comment, 24 Dec., p. 1306) needed to be written, was well researched, and represents a good overview. However, I reject criticism by "a virologist acquainted with NIH affairs," "a virologist under contract to the SVCP," "academic scien-