Commentary: Actuarial Research and Analysis

By Robert J. Myers*

The role of actuaries in connection with social insurance programs like Old-Age, Survivors, and Disability Insurance (OASDI) has often been likened to that of the pilot on a vessel. The actuary is the social engineer who is responsible for computing the estimated financial course of the system over both the short range and the long range. Because of the type of commitments of programs like OASDI, it is desirable that cost analyses should be made over long periods, such as 50 years or more.

Just as the pilot on a sea-going vessel does, the actuary will set forth the possible future financial course of the social insurance system, but then the policymakers (the Administration and the Congress) will decide on any changes necessary in its financing. Again, when plottings or actuarial computations are made, they may well show differences from the previous estimate, indicating that some change is necessary in the financing. Hopefully, these changes will not, at any one time, be too large—and thus require immediate drastic action.

At the inception of the program (which then provided only old-age benefits), the actuarial estimates were made in a detailed manner over a long period of years—from 1937 to 1980. The results of these and subsequent estimates, as well as descriptions of the underlying methodology and assumptions, have been widely publicized over the years. This has been done, most notably, through the annual reports of the Board of Trustees of the trust funds (beginning in 1940), and through several other sources such as articles in the **Social Security Bulletin** and scholarly journals, in the annual reports of the Social Security Administration, and in congressional committee reports and prints. In addition, more detailed presentations and analyses have been given in publications of the Office of the Actuary, Social Security Administration—specifically in its Actuarial Studies (now numbering 102) and Actuarial Notes (now numbering 130).

Quite naturally, over the years the actuarial estimates have become more comprehensive and more complex. In part, this is the result of the availability of a huge amount of operating data (such as those presented to a small degree in the **Annual Statistical Supplement** to the **Social Security Bulletin**). Still another element is the natural development of more refined actuarial techniques, coupled with the availability of high-speed electronic data processing equipment. This combination is in striking contrast to what was available when the original actuarial estimates were made in 1934-35—namely, only census and national life table data, processed by hand calculation on an electric rotary calculating machine (which was still far more rapid than hand calculations, aided by hand-cranked calculating machines or abacuses).

When I was requested to prepare this Commentary, I accepted with much pleasure, but also with some trepidation. My article "Actuarial Aspects of Financing Old-Age and Survivors Insurance," **Social Security Bulletin**, June 1953, is being reprinted on the following pages—as an early example of a description of actuarial research and analysis. I wondered how it would stand up over time. Perhaps immodestly, I am pleased to say that, on the whole, what was brought out in the 1953 article appears reasonably valid and pertinent in the light of today's widespread discussion about the financing of the OASDI program. In fact, it even provides some evidence that occasionally "the wheel is being reinvented."

I might even be so bold as to say that the article would be desirable reading for many individuals who are currently discussing the long-range financing aspects of OASDI, so that they may realize what went on in past decades. In particular, the concepts of pay-as-you-go and partial-reserve financing, as described in the article, continue to be valid. Also, the current misuse of the term "surplus" (as

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meaning annual excesses of income over outgo, or else the aggregate accumulation of such excesses) would not occur if the discussion in the article were considered.

Then too, current discussion would be greatly improved if the actuarial and financial analysis made by a prominent actuary from the private insurance field, M. Albert Linton, as to the criticisms of the trust funds' validity, including the interest receipts thereof, were considered more widely.

Still another area of current debate is whether or not a large fund balance should be built up, and if so, whether it should be maintained into the long-range future or rather be permitted to become exhausted (as is the case under the present financing basis of OASDI).

Perhaps the most valuable part of the article—and the one that well bears reading by participants in the present debate about financing of the OASDI system—is the description of the actuarial bases of the OASI program during the first 15 years of its operations. The original basis was partial-reserve funding (despite some individuals asserting, from time to time, that it was on a fully funded basis). The 1939 Amendments to the Social Security Act lessened the degree of advance funding and also introduced some element of uncertainty as to what the long-range funding intent really was. Thus, the frequent assertion that the 1939 amendments changed the funding to a pay-as-you-go basis is not justified.

The 1950 amendments clarified the situation by definitely providing for partial-reserve funding, although at a lower relative level than in the 1935 Social Security Act. As a matter of fact, the actuarial estimates presented in the article show that, under high-employment assumptions, the fund balances shown in the intermediate estimate were relatively large over the next 50 years. The fund was shown as being about five times as large as the annual outgo in the long run, although decreasing slightly at the end of the period. It is interesting to note that this "five times" ratio is what is also shown as the peak balance in the latest estimates for the current OASDI program. However, the estimates made in the early 1950's did not show the subsequent very precipitous decrease and exhaustion of the fund by the end of the valuation period that is present in the latest estimates.

To summarize the funding situation of the OASDI program in the first two decades of operation, the intent over the long-range future was to build up a sizable fund balance and to maintain it. In practice in the near-future years, this was done only to a small extent, and we had, on a de facto basis, pay-as-you-go financing currently, but with the law intending to have large fund accumulations in the distant future. Beginning in the 1970's, the funding philosophy was changed, and the pay-as-you-go or current-cost basis was adopted in theory, if not always in practice. Then in the 1983 amendments, the result of the financing adopted was the aforementioned temporary (over the next four decades) accumulation of large fund balances, followed by their complete dissolution over the next two or three decades.

Some observers are currently proposing that the funding basis should be changed so that a large balance will be accumulated over the next two or three decades and will be maintained thereafter. Others propose just the opposite—a return to the current-cost basis. In both cases, nothing new in the nature of the program is being proposed because at one time or another each of these procedures was projected.

As the discussion continues about how the OASDI system should be financed over the long range, certain new elements have entered the picture, compared with the situation several decades ago. Primarily, they revolve about the economic impacts involved in the accumulation of mammoth fund balances, and particularly the interrelationship with the Federal non-Social-Security Budget. But even here, all is not new because in the mid-1930's questions were raised about how the then seemingly huge fund balance of $47 billion projected for 1980 would be invested. In any event, the precision of the actuarial estimates for the OASDI system over the long-range future, although not by any means complete, is far greater than any attempts to estimate the future budget situation for the non-Social-Security operations of the Federal Government.