tired benefits over the active working lifetime of the employee. A prefunding approach does this.

Mr. Latimer also points out the greater administrative and actuarial complexities involved in a pension plan approach, particularly if any part of the plan is on a contributory basis. This is certainly true, but that in itself should not discourage us from giving his method serious consideration. If we are to successfully prevent the Government from assuming full responsibility for the medical care of retirees, then one of the things we must be able to do is to provide these employers with satisfactory methods of meeting retired costs. I believe Mr. Latimer has given us an assist in that direction with this timely and important paper.

DISCUSSION BY R. J. MYERS

Mr. Latimer is to be congratulated on his presentation of a very interesting case study in the field of hospitalization-benefit cost estimating. This paper serves the unique function of permitting one to peer inside the actuary's mind as he develops cost assumptions from limited data—both as to the specific plan itself and as to other programs providing similar benefits—before he applies these assumptions to more or less standard actuarial formulas for computation purposes. It will, of course, be recognized that the title of the paper implies a far broader scope than is actually the case, since it deals with a single specific plan and not an analysis of the situation for various programs that would provide hospital benefits for retired persons. Nonetheless, certain of the analysis made in regard to the underlying assumptions is of significance in considering the broad general subject.

I am particularly interested in this paper because of its relationships with, and implications for, the cost estimates that I have prepared for the Administration's health-benefits proposal, which incorporates only hospitalization and related benefits. This proposal is set forth in legislative form in bills introduced by Congressman King of California and Senator Anderson (H.R. 4222 and S. 909, respectively). The provisions of this proposal and the underlying cost estimates are contained in *Actuarial Study No. 52* issued by my office, except for the fact that Secretary Ribicoff in his testimony before the House Ways and Means Committee recommended that the earnings base for OASDI purposes, which is involved in part of the financing of the health-benefits program, be raised from the present $4,800 to $5,200, rather than only to $5,000 as in the introduced bills. This change would be necessary to finance the program sufficiently according to my estimates. For further details on this matter, see my paper "1961 Amendments to the Social Security Act" in the 1961 volume of the *Transactions of the Society of Actuaries*.

My cost estimates for the Administration proposal can be summarized by the statement that the level-cost is estimated at about ⅔% of taxable

payroll. Of perhaps prime interest to me in reading Mr. Latimer's paper was what cost (in terms of payroll) he would derive for the plan that he was studying. No doubt many other people are interested in this particular aspect because there is a considerable difference of opinion about the cost of the Administration proposal (some critics have stated that the cost will actually be at least twice as high as my estimates). Despite the fact that there are many differences in the underlying covered populations and in the provisions of the plans, nonetheless it is possible that some individuals may compare only the resulting final costs; so let us turn to this matter first and then subsequently analyze the reasons for the differences.

The conclusion of the paper is a recommendation that the proposed hospitalization-benefits of the particular plan should be financed by a contribution rate of 3.15%. This figure is almost 5 times as high as my estimate of the cost of the Administration proposal, which would certainly lead one to wonder about the reliability of the latter. Let us now see what causes this great difference.

In the first place, the 3.15% figure arises under the assumption that the past service liability resulting from the initial covered group (including pensioners), who did not have contributions made with respect to them during their entire working time, would be amortized over a 30-year period. If this is done, then following the 30-year period the contribution rate would be decreased to about 1.3% of payroll. To put it another way, if—as is quite proper in a social insurance system—the unfunded accrued liability is never funded, but rather only interest on it is payable, then the long-range level-cost comparable to 3.15% of payroll would be about 2.4% of payroll. However, this is still far in excess of ⅔% of payroll.

Another factor of importance is the difference between the provisions of the plan that Mr. Latimer studied (hereafter referred to as "the Latimer plan") and those of the Administration proposal. In some respects, the Latimer plan is more costly because it has a higher maximum duration (120 days vs. 90 days), because it has no deductible provision (in the Administration proposal, $10 per day for the first 9 days of hospitalization, with a $20 minimum), and because benefits are furnished to disability pensioners under age 65 and their wives. On the other hand, the Administration proposal is more costly because it applies to all insured persons aged 65 and over (not merely to those in this group who have retired), because it provides benefits for widow pensioners (not merely to wives of pensioners as long as the primary pensioner survives), and because it provides certain auxiliary benefits such as skilled-nursing-home care, hospital-outpatient-diagnostic services, and home-health services (certain of these benefits and others of a like nature are included in the Latimer plan but were not considered by him in the cost estimates). It is difficult to say, in balance, which of the plans is the more costly. I would guess that there is not too much difference in cost between the provisions of the two plans.

Another important element is the age composition of both the initial group of pensioners and the existing group of active employees on whose payroll the contributions are to be made. Initially, the cost burden would seem to

be somewhat less for the Latimer plan than for the Administration proposal since the ratio of eligibles to active employees is about 16%, as against a corresponding figure of about 23% for the Administration proposal. Of more importance, however, is the fact that the active employees covered under the Latimer plan have an unusually old age distribution—with peak coverage in the age group 40-44, as compared with a corresponding figure of 25-29 for the general labor force. In fact, as Mr. Latimer points out, the active employees under his plan are quite apt to decline in number in the future, whereas the covered group under OASDI is anticipated to increase significantly in the future in line with general population trends. In balance then, it would seem that a considerable portion of the difference in the cost estimates arises because of the unusual demographic structure under the Latimer plan.

We are now led to examine the basic underlying cost assumptions for further light on the differences in the cost estimates. Two basic elements are involved—hospital utilization rates and average daily hospital costs.

As Mr. Latimer points out, data on hospital utilization rates among aged persons are rather sparse and incomplete. His assumptions are based on experience under insurance plans and not that obtained from surveys. Admittedly, the latter sources of information have certain limitations, but it seems to me that much of value can be obtained from them when they are properly used and adjusted for such factors as (1) not all individuals surveyed having benefits as freely available as if they had insurance and (2) the significant extent of hospitalization used by decedent, who normally are not included in surveys. Moreover, surveys such as those that have been conducted by the U. S. Public Health Service are based on a far greater amount of data than some of the limited studies of insurance experience that Mr. Latimer mentions.

Mr. Latimer first derives an average duration of hospitalization (spread over all pensioners and not merely over those who are hospitalized) of 3 days for males and 2½ days for females, based on the maximum duration provision being 120 days. A 90-day maximum, as in the Administration proposal, would reduce these averages by about 1½% relatively. These average durations are comparable with the corresponding figures in the cost estimates for the Administration proposal—namely, for both sexes combined, an average of 2.5 to 3.0 days in the initial year of operation.

Mr. Latimer then goes on to adjust the average hospital utilization rate for males to allow for the fact that he is dealing only with retired persons; the experiences generally relate to working and retired persons combined (as does the Administration proposal). His adjustment for this factor is about 15%. This seems to be too great an adjustment based on (1) his assumption that hospital utilization by those employed is only 75% of that of those who have retired and (2) the fact that pensioners aged 65 and over represent 81% of the total of aged pensioners and active employed persons aged 65 and over (and this proportion will increase in the future). Under such circumstances, the adjustment should be 5%.

Mr. Latimer next increases his assumed average hospital utilization to al-

low for a higher assumed utilization by disability pensioners. No experience is available as to hospital utilization by disability pensioners. Mr. Latimer assumes that such utilization can be obtained by rating-up the pensioners involved in accordance with their higher mortality. As a result, most of his disability pensioners (including those beyond age 65, who continue to be so classified) have an assumed utilization rate of almost 8 days per capita (with very few having less than 6 days per capita). It cannot be stated for certain whether or not this is a reasonable assumption, but it should be noted that some people believe that disability pensioners will have hospital utilization of about the same order of magnitude as for all aged persons combined (see page 79 of report "Hospitalization Insurance for OASDI Beneficiaries," referred to by Mr. Latimer in his footnote 8).

As a result of the assumed higher utilization for disability pensioners, Mr. Latimer raises his average days of hospitalization for primary pensioners to 3.9 days per year, while retaining the figure of 2.5 days for wives. The latter figure tends to be relatively low because wives are covered for hospital benefits only while the basic pensioner is alive and, therefore, tend to be younger on the average than the total aged female population.

Mr. Latimer derives an average daily hospitalization cost of about $29 for 1960 and adds to this a 9% loading for administrative expenses, making a total of about $31.50. This is virtually the same as the first-year cost figure used for the estimates for the Administration proposal—namely, $32.

Next, Mr. Latimer examines possible future trends of utilization and costs. Admittedly, this is a very necessary procedure when making cost analyses for hospital-benefit proposals, but it should be recognized that it is fraught with dangers and uncertainties. Mr. Latimer perceives this and examines a wide variety of theoretical possible trends. Some of these, however, seem even more unlikely than the assumption that present utilization rates and costs will continue unchanged in the future, which he discards as being unjustifiable (but more on this later).

In considering future trends of utilization rates and costs, Mr. Latimer after examining past experience (primarily in regard to average daily costs) makes certain assumptions as to future increases, which he takes to be on a simple-increase basis rather than on a compound-increase basis. These range from an annual increase of 7% to 9% of the first year cost indefinitely into the future, after combining the two factors of daily cost (which accounts for most of the increase) and utilization. If these assumed flat increases are measured against each specific year's average daily hospital cost, the relative increases for the intermediate figure of 8% would, of course, begin at 8% and after 12 years would be down to 4.1%, and then after another 12 years would be down to 2.7%, et cetera.

Next, in order to offset the anomaly resulting under the foregoing basis of ever-increasing hospitalization costs, Mr. Latimer makes the assumption that there will be several alternatives involving decreases in the flat increases previously assumed. To a certain extent this is a reasonable procedure, but when carried out to extremes, as Mr. Latimer recognizes, this results in average daily hospital costs increasing for a number of years to a peak and then

decreasing until eventually not only becoming lower than present-day costs but also becoming negative. In the final results presented by Mr. Latimer, this theoretical hypothesis was not used.

Finally, Mr. Latimer recognized what he might well have done earlier—namely, that hospital costs in monetary terms is not the significant element, but rather hospital costs in relation to general wage trends. This is important because the contribution rate derived to finance the program is based on payroll. Recently, hospital costs have risen at a rate of about 7% annually; this fact should not be considered alone, but rather in conjunction with the 3% annual rise in the general wage level, so that the net cost effect is only 4%. As indicated in *Actuarial Study No. 52,* the cost estimates for the Administration proposal assumed that this gap would be gradually reduced in the next few years and that the total net effect, before there would be a "catching up" of hospital costs with the general wage level, would be a 14% cumulative increase. Mr. Latimer's final estimate is based on a simple increase of 8% annually for hospital costs and of about 4% for covered payroll, so that the net effect is about 4%. This increase is continued indefinitely into the future and is undoubtedly one of the major reasons why his costs are so much higher than those I made for the Administration proposal.

A vivid example of the effect of this element of assuming continuously increasing hospital costs and utilization is that Mr. Latimer estimates a cost of 1.24% of payroll under 30-year amortization of past service costs if there were to be no increase of utilization in the future and if the hospital costs were to rise no faster than general wage levels. This cost would be only about .9% of payroll if there were no amortization of past service costs. Mr.Latimer, however, states that he believes that such figures are unjustifiably low and inadequate.

In summary then, where does this leave us? Mr. Latimer has derived hospital-benefit costs that are almost 5 times as high as those underlying the Administration bill. A considerable part of this difference is properly explained by differences in the plans and in the compositions of the covered groups involved. Nonetheless, it must be recognized that there still remains a significant difference in the cost estimates that arises from the assumptions made as to future trends of hospital utilization and of hospital costs relative to general wage levels. I believe that my estimates underlying the Administration bill are based on reasonable assumptions, but quite obviously these are not the only reasonable assumptions possible. Certainly, one cannot say that such an eminent authority as Mr. Latimer, with his long experience in the social-insurance field, does not know whereof he speaks or that his assumptions are completely untenable. Perhaps—as I remember Mr. Latimer saying years ago—it will only be possible to know the experience under a new type of social insurance program after it has been enacted and after several years of experience are available. Finally, it would be of interest to hear from Mr. Latimer what his views are on the cost estimates for the Administration plan.