

nisms by which these adjustments are made, however, are different. In some countries, adjustments are provided for by means of a price index (and/or wage index), under which changes in benefit amounts come about automatically. In other countries, adjustments are made by an ad hoc procedure, usually in the form of a legislative decree. Both methods have their advantages and disadvantages.¹⁹

Cases III and V, discussed previously, are illustrative of the effects on tax-benefit ratios when rises in benefits contain both allowance for inflation and additional increase in benefits. In the context of the present discussion, it would be of interest to appraise the effects on tax-benefit ratios of a system in which social security benefits are continuously and automatically adjusted for price inflation. Case VI assumes that the maximum taxable earnings and the worker's earnings both rise at 5 percent per annum, and that benefit amounts are raised annually in accordance with the assumed rate of advance in the general price level of 2 percent.

Table 3 shows that tax-benefit ratios in case VI are higher than those in case V but lower than those in case IV. None of the ratios are in excess of unity either for the maximum earner (with the highest ratio of 0.89) or for the average earner (his highest ratio being 0.69).

IV. CONCLUDING REMARKS

The highlights of this paper are as follows: (1) There are gainers and losers in social security. The extent of gains and losses depends critically upon assumptions regarding earnings levels, family statuses, the shiftability of the employer taxes, and the factor of price inflation.²⁰ (2) Consideration of price inflation in tax-benefit ratios has the effect of raising the rate at which taxes are compounded and benefits discounted. (3) Cost comparisons between private insurance and social security suggest that a worker with high earnings (annual

¹⁹ The most up-to-date descriptions of the social security systems in the world are available in *Social Security Programs Throughout the World, 1967*, Social Security Administration, U.S. Department of Health, Education, and Welfare (Washington: U.S. Government Printing Office; 1967, 239 pp.). Many social security systems provide for automatic adjustment of benefits to compensate for inflation. Daniel S. Gerig, "Automatic Cost-of-Living Adjustment of Pensions in Foreign Countries," *Social Security Bulletin*, vol. 23, No. 3, March 1960, pp. 16-19, 24). In the United States, two Federal retirement systems adjust their benefits in accordance with the rate of inflation. John P. Jones, "Amendments to the Civil Service Retirement Act," *Social Security Bulletin*, vol. 26, No. 2, February 1963, pp. 12-16; and Marice C. Hart, "Cost-of-Living Increases in Military Retired Pay," *Social Security Bulletin*, vol. 27, No. 2, February 1964, pp. 13-14.

For a discussion of different methods of benefit adjustments, see Robert J. Myers, "The Effect of Dynamic Economic Conditions on a Static-Provision National Pension Scheme," *Transactions, 17th International Congress of Actuaries*, London and Edinburgh, England, May 1964, pp. 328-336, especially 335-336.

²⁰ Participants in social security gain only at the expense of others, including largely those also in the program, and partly, those who are not included in the program (if covered workers bear less than the full burden of the employer tax). With respect to covered workers, the direction of income transfer is (a) from those with higher earnings (up to the taxable ceilings) to those earning less, due to benefit weighting in favor of the latter, (b) from workers who receive little or no benefits to those who receive or who are credited with large amounts of benefits (because of differential mortality rates or by reason of family circumstances), (c) from long-term members to those in the program for shorter periods of time (but still long enough to be entitled to benefits), either due to differences in the work history of individuals or to different dates from which their occupations have been covered, (d) from both of those workers who have not worked long enough to gain eligibility and those married women workers who do not receive benefits on their own contributions to those workers who meet eligibility requirements, and finally, (e) from employed workers to the self-employed on assumption of full-backward shifting.

In view of the differential mortality experiences of the various groups in the population, cited in footnote 2, Negro workers may more often lose under social security due to lower life expectancies. However, this "disadvantage" may be offset by the provisions of survivors and disability benefits which favor both families with large numbers and persons more prone to being disabled.