

lation represents the major part of the future aged population, since the surviving individuals are now 65 to 85 years of age.

During the simulation, work income, pension coverage, and asset histories are kept for each individual. Social security benefits for those persons retired and no longer in the work force (and eligible) can be calculated by applying the average "creditable" wage income generated by the simulation to a social security benefit formula. Where applicable, private pension benefits and government pensions can be estimated based on employee annual wage and/or years of service.

Having calculated private and public pension benefits, a "census" is taken of the retired population at the end of the simulation period, and various distribution of pension income and assets for couples and unrelated persons can be derived.

The simulation technique permits working at the micro-economic level. In addition, sensitivity testing of the model is used to represent a particular system (i.e., the simulation can be rerun many times with one or more parameters being altered each time). Such tests are useful in indicating whether any of the parameters (especially those which are crudely estimated because of data limitations) can seriously distort the results if in error. In addition, such tests help to identify which parameters are most important with regard to policy decisions relating to the area under investigation. Policy alternatives can, therefore, be evaluated using the simulation model to see how certain institutional or behavioral changes would affect the results.

"Possibly one of the most valuable contributions of simulation to date (is) the discipline imposed by the necessity of precisely defining for the computer both the problems and questions to be answered."<sup>6</sup> Simulation forces the investigator to work through the system being represented at a very low level of aggregation. The requirements for programming the model being used require that one attempt to identify all the significant influences, their direction, and their interrelationship.

### 1.2 *Prior research findings*

In an attempt to find out more about the economic situation of retired older people in the future, distributions of pension income arising out of social security, private, and government pension coverage and assets in retirement were projected. For the vast majority of retired persons social security payments together with private pension benefits are now, and promise to be in the future, the dominant source of retirement income.<sup>7</sup> By projecting these benefits, the projections sought to investigate the extent to which the income situation of the retired aged in the future might be improved.

The object of these projections was not so much to predict what the actual future economic circumstances of the retired aged would be in 1980;<sup>8</sup> rather it was an attempt to investigate the pensions and assets which one could expect to be available to the aged, given the existing institutional pension structure and certain assumptions with regard

<sup>6</sup> Martin Shubik, "Simulation of the Industry and the Firm," *American Economic Review*, vol. 50 (December 1966), p. 913.

<sup>7</sup> Epstein, *op. cit.*, p. 36.

<sup>8</sup> Obviously future benefits depend in large part upon public and private pension decisions still to be made.