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Volume Author/Editor: Laurence J. Kotlikoff and Daniel E. Smith

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2 Description of Data

This volume presents data from the following sources: machine readable data files prepared by agencies of the U.S. government, data collected by the National Bureau of Economic Research under the direction of the authors in the course of preparing this book, data collected by private nonprofit research institutions, data provided by private sector firms involved in pension fund management and pension fund counseling, and data published in U.S. government reports. A description of each of these data sources is presented here. The following chapters describe particular aspects of the data in more detail; in addition, they indicate the statistical procedures used to analyze these data.

The U.S. government data files used in this study are listed and described below; also listed are abbreviated titles that reference these data sources throughout the book.

U.S. Government Data Tapes

The May 1979 Bureau of the Census Current Population Survey BOC-CPS (1979)

The Bureau of the Census Current Population Survey is a monthly survey of households dating from 1940. The survey records the employment status and income sources of household members in addition to a host of other economic and demographic information. The BOC-CPS selects its sample by dividing the United States into approximately 2,000 primary sampling units. Next, the BOC-CPS chooses a stratified sample of primary sampling units and randomly samples households within this group of primary sampling units. The probability that a household is included in the sample is roughly 1 in 1,500. Each household in the BOC-CPS participates in the survey for 4 consecutive months in each of 2 consecutive years. For most years, the monthly files contain household identifiers permitting the concatenation of household records across months and, in many cases, across years. Thompson and Shapiro (1973) and *The BLS Handbook of Methods* (U.S. Department of Labor, 1976) provide excellent descriptions of the CPS sample design.

The BOC-CPS (1979) is the primary source of cross-section data used in chapter 3 to examine pension coverage of private wage and salary workers. This survey is the first CPS survey to ask labor force members detailed questions about their participation in a pension plan and the extent to which their pension benefits are vested. The pension supplement to the May CPS questionnaire was jointly developed by the Department of Labor and the Social Security Administration. All households responding to the May CPS pension supplement also participated in the March CPS. Hence chapter 3 uses this new pension information in combination with the standard March and May CPS demographic and economic information to tabulate pension coverage and vested status by age, sex, race, earnings level, occupation, union status, and industry. The BOC-CPS (1979) file contains information on 61,641

households and 160,544 individuals living in these households. The subsample of currently employed private wage and salary adult respondents numbers 19,000. This subgroup is the focus of many of chapter 3's enumerations. The BOC-CPS (1979) population weights indicate that the 19,000 respondents were drawn from a universe of 30 million potential respondents in the United States in 1979.

The March 1969, 1974, and 1980 Bureau of the Census Current Population Surveys
BOC-CPS (1969), BOC-CPS (1974), BOC-CPS (1980)

These data files provide a basis for time series as well as cross-sectional analysis of the receipt of pension income by the elderly. The March BOC-CPS surveys, while covering a somewhat different set of issues from the May BOC-CPS surveys, are based on the same sample design as the May CPS survey. The 1969, 1974, and 1980 March CPS tapes provide information from 47,247, 46,596, and 70,583 household interviews, respectively. The corresponding numbers of individuals interviewed in these surveys were 151,848, 133,282, and 218,100. The tabulations in chapter 3 on the pension income of the elderly are based on samples of 12,000, 12,000, and 18,000 elderly households and 19,000, 18,000, and 27,000 elderly individuals from the three files BOC-CPS (1969), BOC-CPS (1974), and BOC-CPS (1980), respectively. According to CPS population weights these individuals and households were drawn from a universe of 15,074,678, 17,536,811, and 22,265,358 elderly households and 24,202,664, 27,345,449, and 33,302,717 elderly individuals in the three respective years.

The 1977 Department of Labor Employee Benefit Survey EBS1 File
NBER-DOL EBS1 File (1977)

Our principal source of data concerning the structure of U.S. private pension plans is this 1977 Department of Labor EBS1 survey. The Employee Retirement Income Security Act of 1974 (ERISA) requires plan sponsors to report the characteristics of their pension plans to their workers as well as to the U.S. Department of Labor. In 1976 the Department of Labor required plan sponsors to provide detailed information on form EBS1 concerning the plan's benefit formulae, vesting schedule, normal and early retirement ages, and eligibility requirements. The NBER-DOL EBS1 File (1977) contains a sample of EBS1 forms filed in 1976 and updated in 1977. The file includes 71.4 percent of all plans with 100 or more active participants and 5.7 percent of plans with fewer than 100 active participants. The total number of plans in the computer file is 44,093. The number of active participants reported by these 44,093 plans equals 25,226,654. On the basis of weighting procedures developed for this study, there were 456,373 private pension plans with 41,176,927 participating workers in 1977.

The 1977 Department of Labor Employee Benefit Survey EBS1 Subsample File
NBER-DOL EBS1 Subsample File (1977)

Unfortunately, the NBER-DOL EBS1 File does not contain sufficiently complete information with respect to certain vesting and benefit plan provisions. More detailed information is available on the original EBS1 questionnaires that are on file with the Department of Labor. For purposes of presenting detailed tabulations of particular vesting and benefit features a subsample of original EBS1 questionnaires was collected from the Department of Labor using the NBER-DOL EBS1 File to choose the sample. The NBER-DOL EBS1 Subsample File contains 1,452 plans with 11,448,672 active participants. The sample is random and highly stratified, by both industry and plan size. It includes all defined benefit plans with more than 10,000 participants and half the defined contribution plans with more than 10,000 participants. The sampling fraction for the remainder of the universe varied from 1 to 50 percent depending on the industry and the size of the plan. Information for the plans in this sample is complete; in cases where the EBS1 form contained missing information or inconsistent responses, the plan sponsor was telephoned for clarification.

The 1977 Internal Revenue Service Survey of Financial Characteristics of Private Pension Plans—Form 5500
IRS 5500 File (1977)

ERISA also mandates that pension plans provide balance sheet and income statements to the Internal Revenue Service. Forms 5500, 5500C, and 5500K of the Internal Revenue Service provide the vehicle for pension funds to report this information to the government. Pension plans with 100 or more participants were required to file Form 5500. Smaller plans filed either Form 5500C or Form 5500K. Form 5500K was required of owner-employee plans with fewer than 100 participants in which at least one owner held a 10 percent or greater interest in the enterprise. The present volume considers only data reported on Forms 5500 and 5500C, referring to both sets of information simply as IRS 5500 File (1977). Form 5500 requests beginning- and end-of-year market values of pension fund assets and liabilities. It also records contributions to the fund and the fund's benefit payments to recipients. Chapter 5 uses these data to examine the variations in pension fund portfolios, contributions, and benefit payments with respect to pension fund size, industry, and union status. The IRS 5500 File (1977) is a weighted sample of the 1977 Forms 5500 and 5500C that were filed with and processed by the Internal Revenue Service during the period 1 July 1978 through 30 June 1979. Of all 1977 Forms 5500 and 5500C that were ultimately filed, approximately 77.5 percent were filed during this period. The IRS 5500 File (1977) consists of a 100 percent sample of early filed plans with 100 or more participants and a 3.33 percent sample of early filed plans with fewer than 100 participants. The sample included on the tape consists of 39,189 plans with \$198.4 billion in reported total assets. Using these sampling fractions and the data regarding the fraction of total plans that were filed during the sampling period, weights were constructed to reflect national aggregates. One problem with the weighting procedure was that the fraction of very large plans filing during the sampling period was slightly higher than the fraction for the rest of the universe. To overcome this bias, a second set of weights was constructed using the fraction of total participants covered by plans filing during the sampling period rather than the fraction of total plans. This second set of weights is used to estimate national aggregates of pension assets and the number of participants while the first set of weights is used for simple plan counts. Aside from this peculiarity, the IRS 5500 File (1977) appears to permit unbiased inferences with respect to financial characteristics of the universe of U.S. private pension funds; comparisons of data from the IRS 5500 File (1977) and the very recently released "1977 Employee Benefit Plan Statistical Tape" that contains a more complete sample of the 1977 5500 series forms suggest no significant correlation between filing date and pension fund characteristics. On the basis of the survey's population weights, the estimated total value of assets held by private noninsured and partially insured pension funds in 1977 is \$274.6 billion. This figure excludes trust assets designated to purchase unallocated insurance contracts.

The Social Security Administration 1969, 1971, and 1973 Longitudinal Retirement History Survey and the 1973 Matched Social Security Earnings Record Tape
SOC SEC RHS (1969–73)

In 1969 the Social Security Administration launched a 10-year biennial longitudinal survey of the elderly. The initial 1969 survey covered 10,000 households. Surviving members of these households have been reinterviewed every 2 years through 1979. In 1978 the Social Security Administration produced an additional file that contained the 1973 RHS respondents' social security summary earning records for the years 1951 through 1974. Sampling procedures and a description of the RHS can be found in Ireland et al. (1976). The National Bureau's SOC SEC RHS (1969–73) file is a merged file of 1969, 1971, and 1973 surveys as well as the summary earnings record file. These data provide a basis for analyzing how much of the total economic resources of the elderly is represented by pensions. The earnings records provide the opportunity to examine this information by the level of lifetime income. Chapter 3 analyzes data from a subsample of approximately 2,000 elderly couples with complete data.

The 1979 Department of Labor Survey of Private Pension Benefit Amounts
DOL-SPPBA (1979)

This computer file contains some of the most current information concerning the pension benefits of retired workers. The source of the data is a 1979 Department of Labor Office of Employee Benefit Provisions survey that was sent to approximately 800 large establishments requesting identification of their current pension recipients and the value of 1979 benefit payments to their recipients. In addition, information concerning various structural features of the firms' pension plans was solicited. Plan sponsors were also asked to describe the amount and nature of cost of living adjustments to pension benefits over the period 1973 to 1978. The Department of Labor has made this an especially interesting data set by matching the Social Security Administration's summary earnings records of pension beneficiaries from 1951 through 1976 to other beneficiary information. Approximately 300 firms provided sufficient information for inclusion in the sample. These 300 firms reported, however, close to 400,000 pension recipients. But it should be noted that since this sample was drawn from a universe of plans rather than participants, the sampling error associated with participant-weighted estimates of pension characteristics may be higher than might usually be expected. Preliminary Department of Labor estimates of this sampling error range from 2 to 8 percent, depending on the detail of the tabulation being performed. Chapter 3 combines the social security earnings record information with reported 1979 pension benefit payments to compute pension benefit replacement rates, where "replacement" is relative to average real annual earnings computed over alternative periods of a retired participant's working career. Chapter 4 uses this file to tabulate cost of living increases received by these 400,000 recipients over the period 1973 to 1978.

The 1979 Bureau of Labor Statistics Level of Benefits Survey
BLS-LOB (1979)

The BLS-LOB (1979) computer tape records information from a survey of 1,469 establishments with 3,386,121 pension plan participants. These establishments constitute a subsample of the 1979 National Survey of Professional, Administrative, Technical, and Clerical Pay. Based on the file's population weights this subsample covers 17,965,282 private pension plan participants in the United States, which is slightly over half of all participants covered by private pensions. The subsample's universe consisted of all firms with over 100 employees with the exception of mining, construction, and retail trade establishments where the minimum firm size was 250 employees and service establishments where the minimum firm size was 50 employees. Sampled establishments were requested to report work schedules and information about eleven types of fringe benefits. This information was provided for each of the three occupational groups. The BLS-LOB (1979) pension benefits tape consists of establishment records for each occupational group that detail features of pension benefit plans covering the particular occupational group in question. Unfortunately, firm identifiers are intentionally excluded from the computer record; hence it is impossible to reconstruct the actual pension characteristics of the initial establishment. The data can, however, be used to estimate industry-wide or occupation-wide values of pension variables. This data tape is particularly informative with respect to cost of living adjustment provisions and early retirement benefit formulae.

The 1977 NBER Tax Simulation File
NBER TAXSIM File (1977)

Each year the Department of Treasury makes available a public use file of individual income tax returns. The data are pre-audit and include roughly 100 items from IRS Form 1040 and associated schedules. The 1977 public use file is an income-stratified random sample with 140,000 returns including all returns with adjusted gross income of more than \$200,000. The NBER TAXSIM File (1977) is a 25,000 record stratified random sample of the 1977 public use file. It contains 50 percent of all returns reporting adjusted gross income over \$200,000 and a 10 percent sample of all other returns. New sampling weights were

constructed to permit estimation of national aggregates. The NBER TAXSIM File (1977) is the data source for chapter 3's analysis of individual retirement accounts (IRAs) and Keogh plans.

National Bureau of Economic Research Pension Data Surveys

The NBER Fortune 1000 1980 Annual Reports Sample NBER Fortune 1000 (1980)

In March 1980 the Financial Accounting Standards Board (FASB) recommended that corporations include in their annual reports estimates of their pension plans' total accrued liabilities as well as vested accrued liabilities according to a new set of FASB accounting standards. In addition, FASB urged disclosure of the pension plan's net assets and the interest rate assumed in the liability calculations. While FASB recommended use of its new pension accounting procedures in 1980 corporate annual financial statements, many large corporations did not have sufficient time to include the new information in their reports. To determine what information was available, we collected the 1980 annual report of each of the Fortune 1000 corporations. Of the 1,000 annual reports, 495 reported pension financial information in the manner prescribed by FASB in March of 1980 (See FASB 1980 Statements 35 and 36). These 495 corporations accounted for \$135.3 billion in corporate assets in 1980. Chapter 5 presents estimates based on FASB procedures of pension liabilities for these 495 corporations and compares the magnitude of these liabilities with total corporate debt and total corporate assets. The 1980 annual reports list corporate debt at book value, but list corporate assets at both book value and replacement cost.

Frank Arnold's Survey of the 1978 Financial Status of State-administered Pension Systems: Theory and Evidence

In the course of preparing his Harvard Ph.D. dissertation entitled "The Financial Status of State and Local Public Employee Pension Systems: Theory and Evidence," Dr. Frank Arnold gathered information on all state-administered pension plans with over 500 participants. The Frank Arnold STPS (1978) data base covers 144 state-administered pension plans that report 10 million active participants. The file contains summary plan descriptions for each state plan and additional information concerning the plan's finances, the number of participants, and the demographic characteristics of covered employees. Chapter 6 and 7 use these sources of information plus the Census Bureau's financial information to produce tables detailing structural and financial features of state-administered pension plans. Unfortunately, state plans do not routinely report their pension fund liabilities. What information is available cannot be consistently compared across states because of differences in actuarial procedures and assumptions. Reliable estimates of the unfunded liabilities of state as well as local pension systems are obviously essential to a complete description of public pension systems. Fortunately, the STPS file contained sufficient information to estimate the unfunded liabilities of the state-administered plans on an actuarially consistent basis. These estimates are presented in chapter 7.

NBER Survey of the 1978 Status of City and Other Large Local Pension Plans NBER CLLPS (1978)

This NBER survey, conducted in the summer of 1981, gathered information on the structure and financial status of large-city and other large local pension plans. The sample was chosen from the Bureau of the Census publication *Finances of Employee Retirement Systems of State and Local Governments in 1978-79*. This publication provides a listing of fully as well as partially funded local pension plans with 500 or more participants. "Pay as you go" local pension systems are not included in the list. The NBER sample of city and local pension plans includes a complete sample of pension plans with 500 or more members from the nation's 20 largest cities. Of the remaining 259 localities in the 1978 Census publication (excluding states), 96 localities were selected at random and a complete survey of all

pension plans with 500 or more members in these localities was conducted. The 20 large cities and 96 other localities reported 156 pension plans covering 873,494 active participants. We collected summary plan descriptions for each of the city and local pension plans in the sample. The information from these summary plan descriptions as well as the U.S. Census data provide the basis for many of the tabulations in chapter 6 and 7. Dr. Frank Arnold used these data plus information from his survey of state-administered plans to estimate city and other large local pension liabilities. These estimates are presented in chapter 7.

Private Nonprofit Research Institution Surveys

SRI International—Milliman and Robertson Survey of Small Local Pension Plans

In 1979 SRI International, a private nonprofit research institute in Menlo Park, California, conducted a survey under contract with the U.S. Department of Housing and Urban Development of the structural and financial features of small, locally administered pension plans with fewer than 1,000 participants. William Smith and Jeffrey Reade of the actuarial firm Milliman and Robertson of San Francisco, California, assisted SRI International in the collection of this information and prepared estimates of the financial status of small pension plans. Their estimates appear in *Local Public Employee Pension Plans—Current Condition and Prospects for the Future* (SRI International 1982). With the approval of the U.S. Department of Housing and Urban Development, SRI and Milliman and Robertson generously provided the NBER with a subsample of plans with fewer than 500 participants. We requested this subsample because our own CLLPS survey of large-city and large locally administered pension plans covers only plans with 500 or more participants. The subsample of small local plans contains 148 plans. This sample was randomly selected from an estimated national population of 4,616 small, locally administered pension plans with fewer than 500 participants. The number of active participants covered in the SRI–Milliman and Robertson plan sample is 12,720. This sample of active participants corresponds to an estimated total U.S. population of 317,523. Tabulations of the structural features of small, locally administered pension funds are provided in chapter 6. The financial status of these pension funds is examined in chapter 7. The unfunded liabilities of small pension funds were estimated by Dr. Frank Arnold in a manner identical to that used for the financial valuation of state and large local pension obligations. We choose to make our own estimates rather than use those of Milliman and Robertson to preserve comparability of liability estimates across all nonfederal public pension plans. Dr. Arnold's actuarial procedures differ only slightly from those of Milliman and Robertson, and his estimates are in close accord with those published in *Local Public Employee Pension Plans—Current Condition and Prospects for the Future*.

Employee Benefit Retirement Institute Pension Studies

In recent years the Employee Benefit Retirement Institute (EBRI) of Washington, D.C., has conducted a series of studies of private and public pension funds. Many of these studies will appear in EBRI's forthcoming book *Retirement Income Opportunities in an Aging America: Coverage and Benefit Entitlement*. Chapter 1 uses the EBRI studies in discussing pension coverage.

Chamber of Commerce of the United States, Employee Benefits Historical Data, 1951–79

U.S. Chamber of Commerce

The Chamber of Commerce of the United States over the past 36 years has conducted eighteen surveys of the compensation practices of American businesses. Data from sixteen of these surveys are summarized in this report. Chapter 5 reproduces Chamber of Commerce tabulations concerning employer contributions to private pension funds. The number of firms sampled by the Chamber of Commerce has varied over the years from 736 to 1,150.

Roughly 60 percent of sampled businesses come from manufacturing industries, and roughly two-thirds of each year's sample of firms are included in the next year's survey. While the sample universe is not randomly selected, the longitudinal aspect of the data set permits meaningful time series comparisons.

American Council of Life Insurance Pension Studies

In 1974 the American Council of Life Insurance began producing an annual report entitled *Pension Facts*. The report contains general data relating to private and public pension systems in the United States followed by a discussion of issues current that year. Basic time series data are presented on various aspects of pension systems, including the number of people covered, the number of beneficiaries, the value of benefits paid, employer and employee contributions, assets and reserves, and the distribution of assets. *Pension Facts* data for plans administered through life insurance companies are the source of many coverage and pension fund statistics presented in this volume.

Private Sector Pension Surveys

Chapters 5 and 7 survey the return performance of private and public pension funds. The data presented here were freely provided by A. G. Becker, Inc., of Chicago, the Frank Russell Company of Tacoma, Washington, A. S. Hansen of Chicago, Hewitt Associates of Lindenshire, Illinois, and Piper Associates of Stamford, Connecticut. Each of these firms provided special tabulations of annual and cumulative rates of return based on their data that extend, in many cases, back to 1960. A. G. Becker, Inc., and Piper survey the return performance of many of the equity and fixed income portfolios of those pension funds that have joined these respective surveys. In some cases all of the portfolios belonging to a particular pension fund are included in these surveys; in some cases only a fraction of a participating pension fund's total assets are included in the survey. The A. S. Hansen, Hewitt Associates, and Frank Russell Company surveys study the return performance of comingled equity and fixed income pension investments managed by banks and insurance companies. Particular pension funds may have only a portion of their total assets invested in the bank and insurance accounts participating in these surveys. In addition, the monies invested in these accounts may come from a diverse set of pension funds. The five return performance surveys may overlap; i.e. two surveys may cover the same pension portfolio or the same bank or insurance account. To maintain the confidentiality of individual survey respondents, we requested only aggregate data. Each of these surveys covers a large fraction of total private pension fund investments. In combination, these surveys appear to cover the great bulk of all private pension fund investments.

Published Government Data

This book reproduces data or makes use of data reported in the following government publications: The Social Security Administration's *Annual Statistical Supplement*, the Bureau of the Census's *Finances of Employee Retirement Systems of State and Local Governments in 1978–1979*, *Statistical Abstract of the United States*, the Bureau of Labor Statistics' *Employment and Earnings*, and the Securities and Exchange Commission's *Monthly Bulletin*.