1-23/OLL

file Personnel General

25 JAN 1984

99

MEMORANDUM FOR: Deputy Director of Personnel for Special Programs

Deputy Director of Personnel for Policy, Analysis, and Evaluations

FROM: [redacted] STAT
Liaison Division
Office of Legislative Liaison

SUBJECT: Senate Governmental Affairs 13 December 1983 Retirement Forum

1. Attached for your information and analysis is a complete copy of the witness list and prepared testimony submitted for the subject retirement forum. This forum, the first of several that will be conducted during the coming months, was sponsored by Senator Ted Stevens (R., AK), in his role as Chairman of the Civil Service, Post Office, and General Services Subcommittee of the Committee on Governmental Affairs. The purpose of these retirement forums is to develop a broad base of understanding and knowledge of retirement and pension systems in both the public and private sectors in preparation for consideration of supplemental Social Security retirement legislation.

2. I would normally have attended this forum but was not available on the date it was conducted. I will plan to attend all subsequent forums, the next of which is scheduled for 16 February 1984. If the Office of Personnel (OP) is interested in having one of its own at this and succeeding retirement forums sponsored by Senator Stevens, please advise and I will try to make the necessary arrangements. It is my understanding that Mr. Ed Hustead of Hay Associates, Inc. attended the 13 December 1983 session.

3. Please advise if this office can be of further help in this or any other regard.

[redacted] STAT

Attachment
As stated

Distribution:
Original - Addressees
1 - C/LD/OLL w/o att
1 - C/LEG/OLL w/att
1 - TBC Chrono w/o att
1 - TBC Subject w/att

Approved For Release 2008/08/21 : CIA-RDP86B00338R000400510001-3

United States Senate

COMMITTEE ON
GOVERNMENTAL AFFAIRS

SUBCOMMITTEE ON
CIVIL SERVICE, POST OFFICE, AND
GENERAL SERVICES

WASHINGTON, D.C. 20510

Policy Forum

Economic Security Programs

December 13, 1983

9:30 a.m. - 4:30 p.m.

Dirksen Senate Office Building Room SD106

I.	The Present Federal Retirement System	Philip Royal Shipp, Jr. Congressional Research Service
II.	Sources of Economic Security	Dallas L. Salisbury Employee Benefit Research Institute
III.	Defining Retirement Income Objectives	Vincent M. Tobin Buck Consultants, Inc.
IV.	Defined Benefit Plans	Dan M. McGill, Ph.D. University of Pennsylvania
V.	Defined Contribution Plans	~~John J. McCormack~~ Steve Weisbart Teachers Insurance and Annuity Association/ College Retirement Equities Fund
VI.	Defined Benefit/Defined Contribution: A Comparison	Robert D. Krinsky Martin E. Segal Company

MODERATOR: Paul S. Berger
Arnold & Porter

Ted Stevens
Assistant Majority Leader

FOR IMMEDIATE RELEASE
Dec. 5, 1983

Contact: Press Office
(202) 224-1039

FEDERAL PENSION POLICY FORUM PLANNED

A Senate Governmental Affairs Subcommittee will sponsor a series of educational policy forums on federal government pension systems according to Senator Ted Stevens, Chairman of the Subcommittee on Civil Service, Post Office and General Services.

The forums are part of a broad range of studies requested by the Governmental Affairs Committee to be used in developing a new supplemental civil service retirement program.

Beginning in 1984, all newly hired federal employees will be required to participate in the social security system as well as the interim plan designed to relieve financial hardships that result from paying into two systems. The interim plan allows new federal workers to make reduced contributions to the civil service system until a new retirement system is developed.

"The purpose of the forums will be to bring together in an informal setting various interested parties to discuss the issues involved in developing a new pension system," Stevens said. "Discussions will be focused on a broad range of issues such as pension plan designs, benefit levels and funding and would serve to educate participants and clarify issues."

The first forum will be at 9:30 Dec. 13, in SD-106.

(more)

Pension experts presenting papers at the forum will include Philip Royal Shipp, Congressional Research Service; Dallas Salisbury, Employee Benefit Research Institute; Vincent Tobin, Buck Consultants, Inc.; Dan McGill, Ph.D., University of Pennsylvania; John McCormack, Teachers Insurance and Annuity Association/College Retirement Equities Fund and Robert Krinsky, Martin Segal Company.

The forum will also include a round table discussion with 40-50 participants.

Persons interested in attending are asked to call the Subcommittee staff at 224-2254.

-30-

SENATOR THOMAS F. EAGLETON

OPENING REMARKS

Before the

POLICY FORUM, ECONOMIC SECURITY PROGRAMS

December 13, 1983

In 1920, when Congress passed the Civil Service Retirement Act, some 330,000 federal employees were covered. Today, only 63 years later, that original Act has been modified more than 150 times by either Congress or an Executive Order, and some 2.7 million active civil servants and postal service workers, plus 1.8 million retirees, are now covered.

What have these changes and this phenomenal growth meant? Obviously, they are a reflection of the growth of the federal government. They are also, however, a reflection of major policy changes about federal retirement.

When enacted in 1920, the civil service retirement program sought to improve government service by improving benefits to employees, but it also sought to keep costs down; by the 1940s and the end of World War II, the purpose had changed a bit and improvement of morale and the protection of employees became a major policy concern; then, beginning in the '50s, the federal retirement system acquired characteristics of Social Security and social welfare, while at the same time setting an example of a comprehensive employee income protection plan.

All of these changes were gradual. Today, however, since Congress mandated inclusion of all new federal employees in Social Security, beginning January 1, Congress will be forced to totally review the civil service retirement program.

In one shot, we will enact a new, perhaps similar, but perhaps totally different, civil service retirement program.

Obviously, this will mean focusing on policy. Will we want a system that simply "holds down costs," the basic policy when the system started in 1920? Will we want a pension plan -- like most private sector plans and civil service in the '40s -- which emphasizes employee protection and simply complements the social welfare aspects of Social Security? Or, as we have at present, will we want an exemplary plan that provides comprehensive employee income protection?

Before we begin to address these policy questions, I feel we must educate ourselves about what has happened and what is happening now in the pension area. The pension landscape of 1983 bears scant resemblance to retirement programs of the 1920s.

Today, pension planning and pension investment are more than big business -- they are so big that pension fund billions are becoming the tail that wags the nation's economic dog. And the plans are so complicated and varied it takes computers simply to keep track of all the options: IRAs, Keoghs, 401(K)s, thrift plans, standard annuities, stock options, and the like. Finally, the laws themselves, particularly the Employee Retirement Income Security Act of 1974, have so changed the pension ballgame that to me it would be almost malfeasance to draft major retirement legislation without a thorough study of the realities of today's pension world, both public and private.

Thus, I am delighted to welcome the pension experts and others in this room who came to be enlightened about this complicated and important area.

As you may know, Senators Roth, Stevens, Bingaman and I began our educational efforts in late summer, when, on behalf of the Senate Governmental Affairs Committee, we asked the General Accounting Office, the Congressional Budget Office, and the Congressional Research Service to undertake a coordinated effort to gather actuarial and economic pension data. We felt it was vital for the Committee to have such data prior to drafting legislation.

At the same time, we concluded that we, and others who would be interested, simply needed to learn more about pensions. The most efficient and effective way to cover the topic seemed to be to invite "experts" to present information that could be discussed and debated in a public forum. Today opens the first of what we intend to be a series of five forums. We hope these forums will acquaint the Congress and the public with pension issues of the day so that when the politics emerge -- the lobbying, the hearings, the actual legislative drafting -- we will all speak with a better understanding of some basic facts and data.

To that end, I return this important forum back to Mr. Berger, adding only my personal thanks and the thanks of the Committee to those individuals who made today's event possible.

Congressional Research Service
The Library of Congress

Washington, D.C. 20540

THE CURRENT FEDERAL RETIREMENT SYSTEM

Prepared by
P. Royal Shipp
Senior Specialist in Social Legislation

for the
1983-84 Policy Forums on Federal Retirement

Sponsored by
Subcommittee on Civil Service, Post Office and General Services
Committee on Governmental Affairs
United States Senate

December 13, 1983

PREFACE

The objective of this paper is to present an analytical framework for thinking about the issues in the civil service retirement system. (CSRS). Developments in this pension system over the past few years have resulted in pressures for making major changes (or reforms) in the CSRS.

One development was the passage of the Social Security Amendments of 1983 which covered certain groups of Federal employees (principally those joining the Federal workforce after January 1, 1984) by social security. Such coverage suggests the need for a supplemental pension system, coordinated with social security, for those newly covered employees.

In addition, critics of the CSRS have claimed that it is too costly, too generous, underfinanced, and that it has an undesirable effect on the ability of the Federal Government to attract and retain competent and experienced employees. These criticisms have been accompanied by proposals by the administration and other groups for changing the current system. These criticisms of the current CSRS will affect the design of a pension for employees newly covered by social security.

The paper begins the discussion of an analytical framework by describing briefly the origin, history, and basic provisions of the current CSRS. This is followed by an analysis of the principal criticisms made of the current CSRS. Most actuarial assessments of the CSRS have concluded that it is more costly than pensions "typically" available in the private sector using the widely accepted entry age normal cost system. Whether this leads to the conclusion that the current system should be reduced or that the cost of the new

system should be less than the current system is a difficult, and should be a deliberate, policy choice. This policy choice should be driven, not just by program cost, but by taking into account that while the value of Federal pension benefits is greater than the private sector, total compensation (including pay and other benefits) may have fallen behind. Beyond that, it is not clear that studies to date have adequately reflected recent changes in private pension and deferred compensation arrangements which have developed over the past few years. The General Accounting Office (GAO) and the Congressional Research Service (CRS) have studies under way which may shed additional light on this question.

The paper continues by grouping the specific analytical issues into three basic categories.

First, there is a discussion of workforce goals, designed to indicate how the choice of specific pension design features can induce greater employee retention or greater turnover. The central design feature at issue is the "portability" of benefits; that is, the extent to which employees moving to employment outside the Federal Government will be able to take along already "earned" pension rights. Since social security will be portable between Federal and private employment for newly covered employees, this change by itself will facilitate movement back and forth.

Second, the design of a new pension system should consider the goal of benefit adequacy. The concept of "replacement rates," that is, the proportion of final year's earnings "replaced" by retirement income, is used to analyze this issue. President Carter's Commission on Pension Policy proposed a national goal of retirement income sufficient to ensure that retirees suffer no loss in income standard-of-living upon retirement. Studies show that this goal is met by full-career employees covered by the current CSRS and by other full-career employees

in jobs with basic social security supplemented by pension coverage. In contrast to social security, the current CSRS does not provide higher replacement rates for lower income employees. An important policy decision will be how much, if any, of this social security "tilt" toward lower-income beneficiaries to retain in the design of the new CSRS.

The third major issue area is cost and financing of benefits. It is important to distinguish between these two. The analytical focus should be on the cost of total benefit obligations of the system rather than on ways of financing these benefits and on the differences between funded and unfunded liabilities. A trust fund, with assets invested in the Federal Government 's own securities performs some important functions, but it does not ensure payment of benefits and does not constitute a prefunded system in the sense that private pension benefits can be prefunded. Investment of funds outside the Federal Government raises additional issues and is a possibility which should be carefully explored.

CONTENTS

I. HISTORY AND PROVISIONS

The Pendleton Act of 1883 marked the birth of the modern Federal Civil Service. The Act sought to eliminate patronage and to attract and retain highly qualified employees by basing the new classified appointments to Federal service on open and competitive examinations. It also sought to provide continuity and political neutrality in Federal service by awarding classified employees more job security than normal private sector employment. The Act did not, however, establish a retirement system for Federal civilian employees.

At the time Congress was considering the Pendleton Act, Federal government workers neither expected nor planned to retire. Few retirement systems existed and most employees worked all their lives in order to support themselves and their families. Many people considered it unfair to fire employees whose only failing was old age, and the removal of longtime civil servants frequently met with a hostile public outcry.

Given these circumstances, government supervisors were understandably reluctant to remove elderly employees from their staffs, particularly since many were Civil War veterans. Instead, an unofficial and unauthorized "public pension" plan emerged. Employees were essentially retired on the job--oldtimers were carried on the rolls and paid full salaries, but performed little or no work. This impromptu plan impaired the performance of government operations by blocking the flow of appointments and promotions required to recruit and retain capable employees. In addition, it was very expensive.

Beginning at the turn of the century, a variety of Civil Service pension proposals began to emerge, sponsored by representatives of labor, management, and the public. The first Federal pension bill was submitted to Congress in 1897, and in the next 23 years over 100 bills dealing with Federal pensions were introduced. The Civil Service Commission began recommending a retirement plan in its annual report in 1898, and retirement plans for civil servants were included in the Republican Party platform in 1912 and the Democratic Party platform in 1918.

Meanwhile, the Federal Civil Service was growing rapidly. Between 1883 and 1918, the Civil Service grew from 131,000 employees to 917,000 employees. With the end of World War I, there was increasing talk of cutting the Federal bureaucracy back to pre-war size. Faced with the need to reduce the size of the Federal payroll and to manage Federal personnel more efficiently, Congress passed the Civil Service Retirement Act in 1920.

The 1920 Act generally limited its coverage to permanent competitive employees in the executive branch of the Federal Government and to regular employees of the District of Columbia Government. During the first year after passage, approximately 330,000 employees were covered under the Civil Service Retirement System (CSRS).

The Act established three retirement ages for different types of employment--62, 65, and 70. In general, retirement became mandatory at the age prescribed, regardless of length of service. Employees separated before reaching retirement age could not receive annuity payments unless they had served at least 15 years. Employees with at least 15 years of service could retire at the specified ages, or at any age if they became totally disabled for useful and efficient service in their position or some other position to which they could have been assigned.

The Civil Service Retirement System was established as a defined benefit plan. In other words, the retirement benefit earned by an employee was based not on how much money he (together with his employer) had contributed to the system, but upon two other factors: the employee's average annual basic salary during his last 10 years of work, and the employee's length of service, up to a maximum of 30 years. The annuity could not be less than $180 per year and could not exceed $720 per year. To fund this benefit, the Act required a deduction of 2 1/2 percent from the salary of each employee, to be credited to a Civil Service Retirement Fund. The Secretary of the Treasury was authorized to invest any Civil Service Retirement Trust Fund money not immediately needed for payment of benefits in interest-bearing securities of the United States. The interest from such investments became part of the fund.

The 1920 Act contained no provisions for optional retirement, no survivor benefits, and no protections for employees who were involuntarily separated through no fault of their own. The pensions provided were far from generous. Strict eligibility requirements and small pensions meant employee contributions more than covered the demands on CSRS funds during the first decade of the plan. The Government, in fact, did not contribute any money at all to the CSRS Fund until 1928.

The retirement system created by the 1920 Act was designed primarily as a management tool. The law provided for only two types of retirement, mandatory and disability. Mandatory retirement for most employees was at age 70, unless continuance in service was authorized by the employee's supervisor. This provision applied to all workers, even those who lacked sufficient years of service to qualify for an annuity. An application for disability retirement could be initiated either by the employee or by the employer.

The initial objectives of CSRS, however, were soon modified by changing economic conditions and new Government policies. The Great Depression exposed the vulnerability of all workers to shifts in the economic climate, and the New Deal expanded the Government's role in providing and promoting economic security for workers and their families. The Government began to add additional benefits to CSRS and to place additional employees under the plan. Coverage was expanded from 331,000 workers in 1920 to over 2 million workers in 1942. Optional retirement, survivor benefits, and protections for involuntarily separated workers were all added to the system.

Events of the 1940s also made retirement benefits a more prominent part of compensation for employees in commercial and industrial enterprises. During this time pension coverage for employees of State governments also was expanding, and by 1947 every State had a retirement system for most categories of State employees.

In 1942, the Internal Revenue Service ruled that employer contributions to qualified pension plans could be deducted from gross income as an ordinary business expense. At the same time, Government wage controls imposed during World War II prompted employers to offer retirement benefits as a means of retaining and compensating workers for increased production efforts without contributing to inflation. In 1947, the Supreme Court upheld a National Labor Relations Board ruling that employees have a legal obligation to bargain in good faith over the terms of pension plans. This decision, coupled with the steel industry's fact-finding board ruling in 1949 that pensions were an appropriate responsibility of industry, led to a rapid increase in the number of pension plans.

The 1930s and 1940s marked the emergence of a second generation of CSRS objectives: the maintenance of income to employees. The concept of retirement benefits as an indirect or deferred form of compensation slowly joined the

concept of retirement benefits as a management tool. A retirement pension became viewed as a right earned through past service. Workers were held to be entitled to an income sufficient to live in dignity upon completion of a full career.

In the years following World War II, additional changes were made to CSRS. A more generous formula for computing annuities was established, minimum benefit levels were set to match those established by social security, survivor benefits were improved, most Government employees not already covered by other Federal pension plans were brought under CSRS, and those still excluded (mostly temporary and intermittent workers) became covered by social security. Beginning in 1962, automatic cost-of-living adjustments were added to CSRS.

As various new benefits were added to the Civil Service Retirement System and as the system began covering more and more retirees and survivors, new income to the CSRS Trust Fund was needed to finance benefits. Beginning in 1928, Government appropriations were added to employee contributions to ensure that adequate assets existed in the CSRS Trust Fund to meet the growing financial demands placed on the system. Periodically, it became necessary to increase the revenue flowing into the fund to assure its continuing ability to meet CSRS obligations. Additional revenue was provided by increasing employee contributions and government payments through existing sources, and by establishing new sources of income to the fund 's account.

The current financing system began in 1969, with the passage of P.L. 91-93. Under the provisions of P.L. 91-93, CSRS income derives from four main sources:

1. Employee contributions. Employees covered by CSRS contribute 7 percent of their basic pay through payroll deductions. (Congressional employees and hazardous duty employees contribute 7 1/2 percent, Members of Congress contribute

8 percent, and in return receive more generous benefits). These deductions are compulsory for most Federal workers; they are optional for Members of Congress and congressional employees;

2. Matching contributions by employing agencies;

3. Interest on trust fund assets; and

4. Direct appropriations from the U.S. Treasury to fund additional liabilities resulting from wage increases; extension of coverage to previously uncovered employees; new or liberalized benefits, except COLAs; and credit granted under CSRS for military service. An amount equal to the interest on the "unfunded liability" (which will be discussed later) is also transferred from the Treasury to the Trust Fund.

The current financing system ensures that annual trust fund income in a given year always will exceed annual fund outlays that year--that the pay-as-you go system will handle immediate needs each year. (As the discussion of unfunded liability will show, the assurance that each year's trust fund revenue will exceed its outlays does not mean that the plan's liabilities are "funded" in an actuarial sense. Because P.L. 91-93 authorizes the automatic transfer of funds from the Treasury to the CSRS Trust Fund to cover the last two categories of revenue, an annual appropriation by Congress is not required, except to approve the matching contribution of each Federal agency contained in that Agency's budget.

The current benefit structure of CSRS is as follows: Employees become vested in the system after five years of covered employment. Workers covered by CSRS are eligible for an unreduced nondisability pension at age 55 with 30 years of service, at age 60 with 20 years of service, or at age 62 with 5 years of service (eligibility requirements and benefit levels for law enforcement officers, firefighters, air traffic controllers, and Members of Congress and

congressional employees are more liberal than the general provisions). Employees whose jobs are abolished or whose agencies are undergoing a major reorganization or reduction-in-force (RIF) are eligible for involuntary retirement at any age with 25 years of service or at age 50 with 20 years of service, but benefits are reduced by 2 percent for each year the retiree is under age 55 at the time of his or her retirement.

Pensions are computed as a percentage of average annual salary during the highest three consecutive years of earnings (High-3). Employees earn 1.5 percent of their High-3 average annual salary for each of their first five years of service, plus 1.75 percent of their High-3 average salary for each of their next five years of service, plus 2 percent of their High-3 salary for each year of service thereafter. The total benefit may not exceed 80 percent of the retiree's High-3 average annual pay; this ceiling is reached after about 42 years of service.

CSRS provides disability pensions to vested employees who are unable to continue working due to disease or injury and who are not qualified for assignment to any vacant position in the same agency at the same pay scale and grade. CSRS also provides automatic survivor benefits for survivors of employees with at least 18 months of service. Benefits for survivors of retirees are automatically provided unless the retiree elects not to have such coverage at the time of his retirement; the selection of survivor benefits results in a reduced monthly annuity.

Retired pay and survivor annuities are protected against inflation. The Federal Statute (5 USC 8340) requires that each March a cost-of-living adjustment (COLA) equal to the increase in the Consumer Price Index (CPI) over the previous calendar year be applied to the annuities of Civil Service retirees and their survivors. In 1982, however, Congress suspended standing laws pertaining to

COLAs in pensions and survivor annuities for all Federal retirees for Fiscal years 1983, 1984, 1985. The Omnibus Reconciliation Act of 1982 (P.L. 97-253) provides that, during these years, COLAs will be effective one month later each year (i.e., April 1983, May 1984 and June 1985), and that non-disabled retirees under age 62 will receive a reduced COLA. Pending legislation would create a new measuring period with COLAs applied in December of each year.

CSRS benefits are taxable as income after the beneficiary has received monthly payments equal to the amount withheld from the employee's paycheck (this portion of the benefit was taxed when it was originally earned). Benefits generally become taxable after about 14 months.

Employees covered by CSRS are not currently covered by social security, and do not pay taxes into the social security Old Age and Survivors Insurance or Disability Insurance trust funds. Since the beginning of 1983, Federal employees have been paying taxes into the Health Insurance Trust Fund and earning credits toward medicare coverage. The Social Security Amendments of 1983 (P.L. 98-21), however, do extend for the first time social security coverage to all new Federal employees, and selected categories of current workers; most current Federal workers remain exempt from such coverage. The Amendments require the following categories of Federal civilian employees to be covered by social security, in addition to CSRS, beginning on January 1, 1984:

1. All Federal employees hired on or after January 1, 1984, including those with previous periods of Federal service if the break in Federal service exceeds 365 days;

2. Congressional employees on the same basis as other Federal employees, as well as current congressional employees who are not participating in the Civil Service Retirement System on December 31, 1983;

3. The Vice President and Members of Congress; and

4. Most Executive Level and Senior Executive Service political appointees.

The Social Security Amendments of 1983 also provide that retirees who become eligible for both social security benefits and a government pension after 1985 will be subject to a reduction in their social security benefits, phased in over a five year period. Federal civilian employees exempted from this reduction include current Federal workers and Members of Congress who become covered by social security because of the Act, and workers with 30 years of of social security covered employment; those with 25 to 29 years of covered work will have their social security benefit reduced by a smaller percentage.

At the time the Social Security Amendments were passed in March 1983, no new Civil Service Retirement System had been designed to supplement social security for newly-covered employees. Without the passage of additional legislation, beginning January 1, 1984, Federal personnel affected by the Social Security Amendments would have begun paying 7 percent of their salary into the social security system in addition to the 7 to 8 percent they already contribute to CSRS. This formula would have placed an excessive burden on these Federal employees, and could have created problems in the recruiting and retention of personnel. 1/

Legislation passed in November 1983 eliminated this problem. Title II of the Federal Physicians Comparability Allowance Amendments of 1983 (P.L. 98-168), known as the Federal Employee's Retirement Contribution Temporary Adjustment Act of 1983, contains language governing treatment of Civil Service employees newly

---

1/ U.S. Congress. House. Committee on Post Office and Civil Service and for the Senate Committee on Governmental Affairs. Effect of Requiring New Federal Employees to be Temporarily Covered by both Social Security and Civil Service Retirement. U.S. Govt. Print. Off., Aug. 31, 1983. (GAO/OCG-83-1)

covered by social security until a modified CSRS incorporating social security coverage is enacted. In general, the Act requires that Civil Service employees brought under social security by the 1983 amendments make the full social security contribution, but have only 1.3 percent of their salaries withheld for the Civil Service Retirement System over the next two years. Unless these employees deposit the difference between the amount withheld at the 1.3 percent rate and what would have been withheld at the 7 percent rate before they begin collecting their pension, however, the benefit earned under CSRS during the years in which they contributed only 1.3 percent of their salary will be offset by that portion of their social security benefit earned during that period.

Members of Congress and Executive Level and Senior Executive Service political appointees employed by the Government on or before December 31, 1983, may select their level of participation in the Civil Service Retirement System. They may choose not to participate at all in CSRS, in which case they will receive a refund of past contributions to CSRS and not receive any pension from that system; they may participate at the 1.3 percent rate, in which case they will receive a pension offset by their social security benefit unless they deposit what would have been withheld at the normal 7 or 8 percent rate; or they may participate at the full 7 or 8 percent rate, in which case they will receive both full social security and full CSRS benefits. If they elect to forfeit their right to CSRS benefits and receive a refund of their past contributions to CSRS, they may resume their participation at a later date, but will not receive credit for their years of service before they terminated coverage unless they first repay their contributions for those years, plus interest.

The Act also provides that any employee who first takes civilian office in the Government on or after January 1, 1984, who participates in CSRS, and who is affected by the Social Security Amendments of 1983 shall be subject to a new

Government pension system when one is established. In addition, any credit earned toward the existing CSRS by any employee who is participating in CSRS on or after January 1, 1984, and who is required to join the new CSRS will be creditable under the new CSRS.

II. CRITICISM OF THE CURRENT CSRS

Only a few years ago features of the Civil Service Retirement System were praised as a model for other pension systems. Recently, however, the CSRS has come under attack with critics pointing to different program deficiencies. During the 1970s, criticisms of CSRS as well as many other government programs mounted. These were prompted by a combination of factors: (1) Public confidence in the Federal government was shaken during the 1970s as the nation struggled with a troubled economy, the end of the Vietnam War, and the trauma of Watergate. (2) Large Federal deficits focused increasing attention on the cost of Federal programs; (3) the cost of the CSRS grew rapidly during this decade, causing some critics to assert that it had become overly generous; and (4) in combination with limits on Federal pay the CSRS made retirement especially attractive and hampered efficient government management of personnel.

Until recently, critics made another major complaint against the civil service retirement system. They objected to the exclusion of Federal workers from social security. They said it was inappropriate that even the top level managers of the social security system, and those who legislated it, were not subject to its rules.

After several years of study and discussion, the social security amendments of 1983 brought new Federal workers, as well as all House and Senate members and top level Executive branch appointees into social security. However, in bringing new Federal workers into social security, thus silencing one criticism leveled against it, Congress is left with the onerous job of

designing a new Federal pension system for newly-covered employees. During the debates over the Social Security Amendments of 1983, which brought Federal workers into social security, several legislators said that Congress intended to enact such a supplementary pension system. Senator Ted Stevens, Chairman of the Senate Subcommittee on Civil Service, Post Office and General Serevices, said, "Obviously a new pension system for Federal employees needs to be developed to coordinate with the social security system." 2 /

Congressman William Ford, Chairman of the House Committee on Post Office and Civil Service, stated that "...we believe that new Federal employees who become covered under social security should be provided retirement benefits comparable to those under the civil service retirement system." 3 /

In addition to designing a new system, the Congress still is faced with continued criticisms of the current system: critics claim that it costs too much and that it has adverse effects on the quality of the Federal workforce. Dealing with these two problems is made more difficult because possible solutions are intertwined with each other. For example, the designers of a new pension system face the following dilemma: they must decide to what extent to pattern the supplemental pension system after the current CSRS. If the new system replicates the current one, it may be subject to the same criticisms. On the other hand, if the new system is substantially less expensive than the CSRS, problems arise of co-workers receiving unequal benefits--some more, some less.

Issues of designing a new system will be developed later in this paper. To help lay the foundation for this later discussion of issues, the nature of the criticisms against the current system are briefly identified here.

2/ Congressional Record, v. 129, Mar. 2, 1983. p. S4251.

3/ Ibid., p. H765.

A. Major Criticism: Too Costly and Too Generous

Most studies done to date agree that the current civil service retirees receive more costly benefits than their counterparts from the private sector. In a recent study published by the Brookings Institution, Dr. Robert Hartman, now of the Congressional Budget Office, stated:

> "The conclusion to be drawn...is inescapable. The CRS system is much more costly to the Federal government as employer (and to the taxpayer) than the combined social security and private pension package is to employers in the private sector." 4 /

For the past two years the Office of Personnel Management has barraged the public with prese releases, Director's speeches, and other instruments to make the following point: The Civil Service Retirement system is too costly and should be cut. For example:

> "...at one time, more generous benefits for Federal employees could be justified on the basis that Federal employees were underpaid compared to the private sector. However, several public and private studies now indicate strongly that Federal employees no longer trail the private sector in pay..." 5 /

The Administration, acting on the perception that CSRS is too generous, has proposed changes that would reduce the cost of the CSRS by 37 percent and increase employee payments to finance the system by 57 percent. 6 /

When critics voice the concern that the current CSRS is too costly, they may be referring to any one or a combination of the following points:

1. The absolute dollar amounts are large. Outlays for Civil

4/ Hartman, Robert W. Pay and Pensions for Federal Workers. The Brookings Institution, 1983. p. 71.

5/ Devine, Donald. Director of the Office of Personnel Management. Office of Personnel Management, press release. Feb. 22, 1983.

6/ U.S. Office Management and Budget. Fiscal Year 1984 Budget. Income Security Section. pp. 5-119.

Service retirement will exceed $21 billion during the current fiscal year. A recent OPM press release stated that the CSRS is the fourth largest entitlement program, ranking only behind OASDI, Medicare and Medicaid. The release went on to point out that it may exceed Medicaid and rise to third place and that CSRS outlays are greater than AFDC and food stamps combined. It is not clear why the CSRS is being compared to food stamps and AFDC rather than the Federal payroll, or the military payroll for that matter. But in a time of $200 billion budget deficits, the size of all programs becomes an issue.

2. Growth has been rapid--both real and nominal. Program outlays were $2.5 billion as recently as 1970, and increased by 607 percent in the next 12 years. This substantially exceeds the growth of GNP (213 percent) and growth in total budget expenditures (272 percent). Looking at "real" rates of growth (with the effects of inflation removed) also shows CSRS outlays increased more rapidly than GNP during this period. CSRS outlays increased by 208 percent compared to GNP at 36 percent and the entire budget at 61 percent in real terms.

Rapid rates of recent growth often leave the specter that growth may continue at such high levels in the future.

However, CSRS outlays are unlikely to grow faster than the economy in the future. The rapid growth of the past decade and a half resulted from (1) the maturing of the pension system as the large buildup of employees of the Great Depression years and World War II came onto the retirement rolls; (2) the effects of benefit improvements enacted after World War II, including full cost of living protection; and (3) the upward effects on Federal pay of rapid economic growth during the 1950s and 1960s which increased subsequent pension amounts. These conditions are unlikely to be repeated. In fact, based on current estimates, the CSRS outlays as a percent of GNP would decline over the next years, from 0.66 percent in 1983 to 0.60 percent in 1988.

3. CSR costs are high relative to similar pension practices in the private sector. This point will be discussed in detail later in this paper. Studies to date almost unanimously favor the position that the CSRS does more than pension systems that provide benefits to similar employees in the private sector.

4. The unfunded liability keeps growing. Although not directly related to cost, OPM has characterized the CSRS 's unfunded liability as representing a menace to the economic well-being of the nation. This colorful point also will be discussed in greater detail in later sections. Unfunded liability sounds like a straightforward concept, but it is not. It is a complex actuarial concept that only those in that fraternity completely understand; and they may disagree on its implications and measurement. This paper maintains that it will be more productive to concentrate on the total size of the obligation or liability incurred by the CSRS than to focus on the question of what share of this total obligation to label "funded" as opposed to "unfunded." 7 /

B. Other Criticisms: Reduced Efficiency of the Workforce

A different group of CSRS critics maintain that the retirement system reduces the efficiency of the Federal workforce. Experts agree that the type of pension system does affect workforce type whether in the private or public sector. In the private sector it is a common practice to design a comprehensive compensation package of wages, fringe benefits and pension rights, that aims to

---

7/ Munnell. Alicia. The Economics of Private Pensions. Discusses funded and unfunded liabilities and demonstrates that given a particular size of obligations, different actuarial methods will yield different proportions classified as funded (as opposed to unfunded). Brookings Institution, 1982. pp. 150-154.

yield a desired kind of workforce. 8 /

The current CSRS has been criticized because the retirement system and the way it interacts with the Federal pay system tend to restrict mobility of workers into and out of the government, as well as to induce the highest level government managers to leave government service as soon as they are eligible to begin drawing their pensions--often during their most productive years.

An employee with 15 to 20 years of work for the Federal government faces the likelihood of severe financial loss if he leaves Federal government before becoming eligible for a pension. If he leaves, he is allowed to withdraw his own contributions, but he receives no interest and no part of the matching sums paid for his pension by his employer, the Federal government. At age 50 after 20 years, an employee's own contributions would amount to only about one-third of the total benefits accrued by him.

Another alternative upon moving to other employment outside the government is to leave the contributions in the system and to begin drawing an annuity upon eligibility. This would be at age 60 with 20 years service and at age 62 with more than 5 years of service but less than 20 years. In either case, the amount of initial benefit would be determined by salaries earned at the time the Federal employment was ended, with no allowance for wage or price rises thereafter. Depending on the rate of inflation and the number of intervening years, the real value of the initial benefit might shrink dramatically. There are two way to avoid this loss: (1) Employees can wait to leave Federal employment until they can establish eligibility through involuntary early retirement or disability; or (2) employees can go back to work for the Federal government before retirement

---

8/ Rock, Milton. Handbook of Wage and Salary Administration. McGraw-Hill, 1972. p. 6-4.

to build up the salary base upon which benefits are calculated.

The current CSRS interacted with the Federal pay system to lose the Federal government many of its most experienced employees during recent years of high inflation. Many top-level government managers retired as soon as eligibility was reached; for many at the peak of their productive careers. In recent years retirement benefits have been fully indexed for inflation and more, (with what was called a "1 percent kicker" and semi-annual adjustments) but Federal salaries have been held down and have fallen in real value. Thus, after a few years some top level civil servants who had retired were able to receive more in retirement benefits than they would have been paid in salary if they had continued working.

III. CURRENT AND FUTURE ISSUES

To summarize, Civil service retirement looms as a major issue for the Congress for two reasons: (1) recent criticisms leveled at the cost, generosity, and other features of the current system, and (2) the need to design a supplemental pension system for Federal workers recently covered by social security. This includes not only all new Federal workers, but some current workers--including Members of Congress, and at their choice, congressional staffs.

The remainder of this paper will discuss in more detail and attempt to provide a simple structure for thinking about issues in civil service retirement--as they affect the current system, the design of a new system, and as the interaction of the two. This discussion of issues will be organized around three themes: (1) workforce goals, (2) adequacy and equity of benefits and (3) costs and financing.

Most Federal programs, and civil service retirement is no exception, have more than one goal. The goals of civil service retirement are not unique to it, but characterize other retirement income systems as well. Nor are these newly discovered goals. Proponents of social insurance in general, and of a pension system for civil servants, discussed the different objectives during debates on both subjects early in this century. The basic arguments have not changed much since then, although at different times different goals have received emphasis. The objectives of civil service retirement have been, first, to support the desired type of workforce by either making it easier or more difficult to move from Federal to non-Federal employment; second, to meet the goals of adequate

and equitable income for retired persons; and third, to do so at a cost that balances the interests of those receiving benefits to taxpayers paying the costs.

A. Workforce Goals

In managing an organization's workforce, specific organizational policy is directed to inducing or reducing employee turnover. This question cuts both ways. In the first place, organizations (public or private) incur substantial training costs whenever they hire new employees. These costs should be amortized over the productive years of employment, and the organization suffers an economic loss if the employees leave during their productive years. Thus, it is in the organization's interest to design compensation packages (including deferred compensation or pensions) to induce employees not to seek other employment. On the other hand, it is in the interest of some types of employers to be able to have employees leave at relatively young ages. Examples include the military and police and firefighters. As the military puts it, they have a need for a work force with sufficient "youth and vigor." The deferred compensation package designed to encourage rapid turnover will look much different from one designed to encourage experienced workers to stay on the job. In the military, for example, the pension benefits (referred to as "retired pay" in the Federal laws) are not vested for 20 years. People who leave the military with fewer than 20 years of service get nothing from the pension system. However, after 20 years, the employee not only vests, but is eligible to start drawing benefits immediately upon ending his employment with the military. Thus, a person with 20 years of military service, regardless of age, can retire and begin receiving benefits (at 20 years the benefits will be one-half the previous base pay.) The average age for enlisted men to begin receiving retirement benefits is 39 and for officers is 43.

Some rather arcane pension concepts describe the techniques used by pension planners to design a plan that meets the particular policy goals of an organization's workforce management policy. The most important of these concepts is "portability." "Portability" means different things to different people. Some like to equate it with social security where a worker can change jobs and continue to earn benefits under social security. In its technical sense, portability refers to the ability to transfer the present monetary value of an individual's vested pension benefits to a succeeding plan or an Individual Retirement Account (IRA). Emphasis is placed on the word "vested" because unless the participant has a vested right in the pension, there would be no credits to transfer (i.e., the terminating employee would forfeit any benefits that had been accrued.) The practice of portability between employer-sponsored plans is virtually nonexistent in the private sector. However, defined contribution plans (those whose benefits are determined by amounts contributed and interest earned) often offer a terminating employee the lump sum credited to his pension account upon terminating employment. Also, companies offering defined benefit plans "cash out" small vested benefits by offering terminating employees a lump sum reprsenting the present value of the future benefit. While amounts received can be "rolled over" (invested) tax free into an IRA and maintained on a tax deferred basis until withdrawn at retirement, company pension plans generally do not have provisions for accepting these amounts upon hiring the employee. It should be noted, however, that there are about 2,600 multi-employer pension plans operational in certain industries and/or geographic areas. A multi-employer plan is a collectively-bargained plan where many employers participate in the same plan. Many of these plans are large. Employees can change jobs and keep earning pension credits and service towards fulfilling the plan's vesting requirements providing that they continue working for another employer

participating in the multi-employer plan. However, since their value is based on salary level (in addition to years of service), price inflation after leaving a job erodes the value of initial pension benefits. Civil service retirement benefits are portable among government agencies, but not between government employment and employment outside the Federal government.

A second feature of pensions that can influence workforce behavior is their "accrual rate"--the rate, expressed as a percent of pay, at which benefits are earned. Just as employees receive specified amounts of cash income, so also they receive specified amounts of non-cash deferred compensation. And as the amounts of cash income differ from company to company, so also do the amounts of deferred compensation. Furthermore, it is possible for deferred compensation to be earned at different rates depending on how long employees have been with the organization. The way this usually works is to multiply the accrual rate times the years of service, times salary (can be final salary, average of the highest three or more years, or an average over the years of work). These rates have a great effect on costs and replacement rates of pension systems. They also affect the workforce turnover, since some employers have larger accrual rates for longer periods of employment. A pension system whose benefit accrual rates vary directly with years of service, such as the CSRS, is called "backloaded." Federal workers have an accrual rate of 1.5 percent for the first 5 years of employment, 1.75 percent for the second 5 years and 2.0 percent for all employment over 10 years. A backloaded pension is thought to tie employees with lengthy service more tightly to the employer.

Features that provide strong financial incentives to stay with an employer have been called "golden handcuffs." This term has taken on a pejorative meaning in recent years as the civil service retirement system, along with government

in general, have come under attack. However, strong "golden handcuffs" should not be criticized unless they hinder the desired goal. If the policy decision is that Federal employment, or certain categories of Federal employment, should be looked upon as a lifetime career, and that long time experienced employees are most capable in carrying out the government's business, then the pension system should continue to tie employees to government service with "golden handcuffs."

On the other hand, if the policy decision is that the government would function better if there were more people moving back and forth between the private sector and the Federal government, then the pension system should, and could be, changed to promote this end. Valid arguments can be made for both points of view, and it is possible to design a pension system to promote either end. The point to be emphasized is that whether an explicit decision on this policy issue is made or not, the design of the pension system will influence the type of workforce that results.

The current CSRS gives employees guaranteed rights to benefits (vested rights) relatively early, but the benefits earned are not portable outside the Federal government. Hence, Federal workers are more "tied" to their jobs than are workers with social security coverage, or other portable pension rights. It follows from this analysis that covering Federal workers by social security will, by itself, increase mobility in and out of the Government because of the portability of social security benefits.

B. Benefit Adequacy

The second objective for civil service retirement, as well as for many other pension programs, and for the largest social insurance and income transfer programs, is to help finance a decent standard of living for persons too old to

continue working for pay. This goal raises questions of measurement and comparison; this goal also requires the examination of CSRS in a broader context that takes into account all the sources of income that are or should be available to retired workers, their dependents and their survivors.

A "three-legged stool" has become a common metaphor for visualizing a policy model of sources of retirement income in the United States. Social security makes up the first leg. From the beginning it was not intended to supply total retirement income, but be a base only. When he signed the Social Security Act in 1933, Franklin Roosevelt said, "

> "We shall make the most orderly progress if we look upon Social Security as a development toward a goal rather than a finished product. We shall make the most lasting progress if we recognize that Social Security can furnish only a base upon which each one of our citizens may build his individual security through his own individual efforts." 9/

Individual savings of all kinds make up the second leg. These can take the form of savings accounts, financial or other investments, life insurance annuities, IRAs and similar programs, and a variety of other means. Pensions constitute the third leg.

Analysis of civil service retirement should begin with the broad policy-oriented veiw rather than a program-oriented view, with program adequacy considered in the context of overall income sources to the retired, insofar as this is possible. In other words, analysis of program adequacy should consist of more than one leg of the stool. At the very least, the Federal pensions for employees newly covered by social security should combine the two in assessing benefit adequacy.

The first issue to address is how to establish the proper level of adequacy.

9/ The Public Papers and Addresses of Franklin D. Roosevelt. Social Security Amendments. V. 8, 1941, p. 80.

In means-tested and social insurance income transfer programs a widely-used measure is the poverty level. One objective of these programs is to transfer relatively large amounts to those in poverty or near this level. Social security, while not a means-tested program, nonetheless has deliberate features of income distribution built into it, and has from the beginning. In fact, such redistributive effects define, in part, what social insurance is. Thus, the social security benefit formula provides more for lower-income earners than it does for higher, as a percentage of total preretirement earnings. The effects of this policy are seen by noting that the poverty rate among the elderly has declined over the past two decades until it now is no higher than for the population as a whole. But without the social security program, the percentage of the elderly in poverty would be 250 percent higher than it is today. 10/ The share of final earnings replaced by social security, the "replacement rate," is substantially higher for lower income than it is for higher income beneficiaries.

Pensions, on the other hand, do not typically use the poverty level as a measure of adequacy, or income redistribution from high to low income as a policy target. Instead, replacement rates have been widely accepted as a measure of pension benefit adequacy. Replacement rates are calculated by dividing the amount of pension benefit received upon retirement by the amount of earnings received just prior to retirement. The analysis in this paper will distinguish between "gross" replacement rates (before taxes and other expenses incurred as a result of working) and "net" replacement rates (after taxes and work expenses).

10/ U.S. Congress. House. Ways and Means Committee. Background material on Poverty. Committee Print, 98th Cong., 1 st Sess. U. S. Govt. Print. Off., Oct. 17, 1983. p. 107.

Net replacement rates are higher and offer a more accurate comparison of pre- and postretirement income standards of living.

In its 1981 report, President Carter's Commission on Pension Policy recommended the establishment of a national policy goal that the level of retirement income available to individuals be sufficient to maintain the same income standard of living they had while working. Such a policy would not be redistributive but would assume roughly the same distribution of net income (after taxes and work-related expenses) as exists among the working age population. Indeed, it does even more. It assumes the pensions can be designed to "integrate" with social security in such a way that the redistributive effects of social security can be offset. In other words, with an "integrated" pension, higher income workers will receive proportionately more in pension benefits than will lower income workers, just as lower income workers receive proportionately more from social security than higher income workers. The current civil service retirement system, not being "integrated with social security, is neutral with respect to its effects on workers with different income levels. Thus, all civil service retirees with the same number of years of service, regardless of their salary level, will receive the same proportion of their salaries, whether low or high, as a retirement benefit.

One of the most difficult issues in designing a new pension system for Federal employees covered by social security will be how to deal with the "tilt" in the social security formula. This "tilt" produces a higher replacement rate for lower earning workers than it does for higher earners. It works like this: to calculate social security benefits, an average is taken of an employee's entire earnings history covered by social security. (Each year of earnings is brought up to the present by increasing each year's amount by a factor which reflects changes in wage rates over time.) Once this average annual lifetime

earnings level is calculated, the actual monthly benefit amount is received by applying different factors to it. The calculations for the workers earning at the maximum level covered by social security ($35,900) would be as follows:

90 % of the first ..... $ 254, equals $ 229

32 % of the next ..... $ 1274, equals $ 408

15 % of the remainder over ... $ 1528, equals $ 63

Thus, the monthly benefit equals $ 700, for earnings at the social security earnings maximum, yielding a gross replacement rate of 23 percent. The distributional effect of the tilt is shown by comparing replacement rates for this maximum earner with the low-income and middle-income earner, for social security only, as shown in the following table:

	Low Income	Middle Income	Maximum Income
Gross replacement rate	47 %	35 %	23 %

Such distributive effects are inherent in the nature of social insurance programs. While it is true that the lower income workers pay social security taxes on the entire amount of their earnings in contrast to higher income workers, actuarial calculations indicate that the lower income workers still recieve a substantially higher "return" on their contributions than do the higher income workers. 11 /

The decision facing the Congress in designing a new system, as it faces all employers with a pension system supplementing social security (and this includes State and local governments as well as private employers) is what to do,

---

11/ U.S. Congress. House. Ways and Means Committee. Staff Data and Materials Related to Social Security Financing. Committee Print, 98th Cong., 1st Sess. U.S. Govt. Print. Off., Jan. 27, 1983. pp. 45-49.

if anything, about this income-redistributing tilt in social security.

There are three basic options: (1) Completely offset it. In other words, offset the pension benefit dollar for dollar with benefits from social security. (2) Ignore it; do not take it into account at all. In other words, simply add the amount of any supplementary pension on top of social security. This would retain the effect of the social security tilt in final retirement income (social security plus pension benefits). (3) "Integrate" the pension with social security in such a way as to offset part of the tilt, but not all of it.

1. Completely offsetting social security. It is technically possible to design a supplemental pension system that, when combined with social security, would exactly replicate the current civil service retirement system. Some statements made at the time the 1983 social security amendments were being debated suggested this possibility for the Federal pension system to supplement social security for newly covered workers. The technical procedure would be simply to offset, dollar for dollar, any social security benefits in calculating the amount of the supplemental pension, with the objective of making the total amount equal to what would have been received if the current civil service retirement had continued in effect for new Federal workers. The effect of this would be that the lower paid Federal workers would receive very little of their total benefit from the new civil service retirement supplemental pension and almost all of their total benefit from social security. On the other hand, the highest paid Federal employees would receive most of their total benefit from the civil service retirement supplementary pension. The reason is that the current civil service retirement system has no tilt in its benefit formula, but returns pensions of equal amounts, relative to earnings, at all levels of earnings.

Internal Revenue Service rules governing private pensions do not permit a plan to fully offset social security benefits. Both employers and employees

receive income tax advantages from the deferred compensation in the form of pension benefits if the plan is "qualified," based on standards specified in the Internal Revenue Code. The IRS would not qualify a plan as eligible for the tax advantages if it were set up to offset completely the tilt features of the social security program. Of course, the new civil service pension does not necessarily have to meet the same "integration" standards as private pensions, but such a plan would be subject to criticism if it did not.

2. Add-on plans. At the other extreme, a pension plan could be designed so its benefits would simply be additive to social security. As in the current CSRS, the supplemental pension could pay a flat percent of final salary, varied only by length of career. Of course, if the new pension system were to maintain the cost of the current system, the amount of this supplemental pension by itself would have to be substantially smaller than the current CSRS; but when combined with social security the average benefit could be about the same. If this same cost as the current CSRS system were used, the effect would be for lower income workers to receive substantially more than workers at the same income in the current system, and for higher earning employees under the new system to receive smaller retirement benefits than comparably paid employees in the current retirement system.

This practice, while rare for salary-related plans in the private sector, is fairly common among state pension systems. 12 / Of 50 state systems, 28 have pure "add-on" plans. One reason for this different behavior is that many state plans were already in operation when the social security act was passed in 1935. Furthermore, according to a study by the General Accounting Office,

---

12/ National Association of State Retirement Administrators. Survey of State Retirement Systems. Sept. 30, 1982.

many state governments prefer this type of arrangement because it is easy to understand and explain to employees and taxpayers alike. 13 / Any of the other methods of coordinating pension benefits with social security can be interpreted by lower income workers as having something taken away from them. On the other hand, add-on plans reduce benefits of higher earners, compared to a plan like the CSRS.

3. Integrating social security with pensions. Integration is a technical term referring to procedures for designing pension plans to offset part of the effect of the social security benefit tilt on final combined retirement income (pension plus social security). There are different ways to do this, depending on how much of the social security tilt pensions designers want to offset and at what levels of income. 14 / For purposes of this paper, it is sufficient to note that integration permits the design of a pension system with replacement rates across the entire range of income levels falling between those resulting from pure offset plans and pure add-on plans.

Of the two principal bills considered to date for a supplementary pension, one is an add-on and one an integrated plan. Congressman Ehrlenborn has proposed a pure add-on plan. While this plan has not been costed out, it probably will be more costly than the current system. This bill includes a thrift plan along with its defined benefit add-on pension plan. Senator Stevens has proposed a defined contribution plan with step rate integration, also to be accompanied by a thrift plan. These thrift, or capital accumulation plans, fairly common in

---

13/ U.S. General Accounting Office. Federal Employee Demographic and Integration of State Retirement Plans with Social Security. CAO/FPCD-83-38, July 27, 1983.

14/ U.S. Library of Congress. Congressional Research Service. Integrated Pension Plans: An Analysis of Earnings Replacement. Typed report, by Ray Schmitt. Jan. 5, 1981. Washington, 1981.

the private sector, can take many forms. The most usual is for the employer to match at specified rates, voluntary contributions to retirement programs by employees. Private sector practice supports the intuitive notion that these would be used more by higher income workers to offset their likely loss of benefits compared to the current system under a pension system integrated with social security. 15 /

The discussion of benefit adequacy to this point has been general and abstract. As the debate proceeds, estimated replacement rates for specific design options can be used as one way of determining their effect and of choosing among them.

A computer-based model, developed at the Congressional Research Service (CRS), has been used to estimate replacement rates for different combinations of pension benefits, including the CSRS. This model is currently being updated to accomodate the many program changes over the past year, particularly in social security. Data used in the following analysis are slightly out-of-date, having been done about one year ago. Nonetheless, they will indicate the magnitudes involved and will demonstrate how such replacement rate data can be used in doing analysis of proposed Congressional options for designing a new, or for making changes in the current, retirement system.

A number of researchers have made estimates of the replacement rate necessary to maintain living standards in retirement. Most agree that retirees need less than 100 percent of gross earnings replacement to maintain their standard of living. While no precise earnings replacement objectives have been established as a matter of national policy, researchers generally agree that individuals need between 60 and 80 percent gross preretirement earnings to maintain

---

15/ Hay/Huggins. Noncash Compensation Comparison. Hay Assocaites. 1983.

preretirement living standards--with rates at the higher level more appropriate for lower income individuals.

Net earnings replacement rates permit a better comparison between pre- and postretirement income. Differences in tax liability before and after retirement and reduction of work-related expenses such as social security, payroll deductions, transportation, clothing and meals purchased away from home are taken into consideration. In addition, differences in discretionary consumption and savings, and possible reductions in living expenses in later life (resulting from lower home financing, educational expenses for children, and health care), influence living standards.

The following tables provide some rough calculations of replacement rates for hypothetical workers receiving benefits from different pension systems, including civil service retirement. Since tax treatment and other expenses vary substantially before and after age 65, net replacement rates are shown. Replacement rates were calculated for both a "low income" worker (final salary of $16,300 in 1982 dollars) and a high-income worker (final salary of $53,900). Since social security has provisions for dependent spouses, replacement rates are shown for both single workers and workers with dependent spouses. These rates are for the year immediately after retirement and for the same workers 15 years later at age 80. The extent of cost-of-living indexation of benefits and tax treatment varies from program to program. Without cost-of-living protection, the value of benefits in real terms declines.

When the replacement rates are higher than 100 percent, the after-tax income of the retiree is actually greater than before retirement. This is true for lower income workers with dependent spouses because social security provides this extra amount for dependent spouses and social security enters into the picture in all programs (except civil service retirement). Social security by

itself (not shown here) does not reach the 100-percent level although it comes close for low-income workers with spouses. This underscores the notion that social security should not be looked upon as the sole source of retirement income.

Table 1. AFTER TAX REPLACEMENT RATES (AGE 65 WITH 40 YEARS OF WORK)

	Low earner		Higher earner	
	Single	Married	Single	Married
Civil service retirement (no social security)	94.6	82.5	118.7	98.1
Military retirement (includes social security)	106.3	127.8	89.6	92.0
Railroad retirement (includes social security-type benefit)	84.7	119.5	64.8	86.9
Social security plus private pension	102.4	117.2	94.4	92.0

Source: Financing Work-Related Entitlement Programs. Prepared for the Senate Committee on Budget, by the Congressional Research Service. The calculations are based on a common set of work histories and earnings records. They were patterned after salaries of Federal workers. The low-income worker had a final salary of of $16,300 and the high earner a final salary of $53,900. Civil Service retirement benefits are not taxed until the amount of employee contributions has been paid back. Ordinarily this occurs after 1 or 2 years. Thus, replacement rates shown here are higher than they would be 1 or 2 years hence. For economic and demographic assumptions, see pp. 52 and 477.

As Table 1. shows, the programs compared here provide very high replacement rates for individuals with long, consistent work histories. This analysis suggests that the pension and social insurance system provides adequate benefits (as adequacy is defined here) for those with long and consistent attachment to the work force, whether they have low or high income.

In general, the programs compared in these tables provide after-tax income replacement at a level fairly close to the level of income before retirement, whether high or low. Except for civil service retirement, the programs shown in Table 1. all include a combination of social security and another type of pension. For the combined systems, married couples receive substantially higher replacement rates as a result of social security's provision of benefits to dependent spouses based solely on the earnings record of the working spouse.

The effect of social security is also seen in the difference between high- and low-income workers. Social security's benefit formula "tilt" shows up as higher income replacement for the low-income workers, except for civil service retirement, which has no social security component. High-income earners under civil service retirement actually receive higher income replacement than do low-income workers, because the difference in tax treatment makes a bigger difference between preretirement and postretirement earnings.

Of the examples considered here, military retirement and civil service retirement have their benefits fully indexed to changes in the cost of living. Thus, 15 years after retirement, their gross benefits have maintained the same relationship to gross preretirement earnings as they had upon retirement. For the railroad retirement and private pensions, however, only the social security component is fully indexed. The private pension counterpart in railroad retirement and typical private pensions are not fully indexed, and thus over time the size of the retirement benefit in relation to preretirement income shrinks. This reduction would amount to about one-fourth in 15 years for high-income railroad retirement and private pension beneficiaries. (See Table 2.) For lower income recipients, whose overall benefits include a relatively larger social security component, the shrinkage is less, about one-seventh for railroad retirement and one-fifth for private pensions. Military retirement and civil service

retirement suffer no diminution at all, since their benefits are fully indexed.

Table 2. AFTER-TAX REPLACEMENT RATE (SINGLE WORKER)

	At age 65		At age 80	
	Low earner	High earner	Low earner	High earner
Civil service retirement	94.6	118.7	82.7	88.8
Military retirement (includes social security)	106.3	89.6	106.3	89.6
Railroad retirement (includes social security-type benefit)	84.7	68.8	72.6	50.3
Social security plus private pension	102.4	94.4	82.5	71.3

Source: See Table 1, p. 33. The differences shown in the table for civil service retirement result from tax treatment. Civil service retirement benefits are taxable but are not taxed until the amount of employee contributions has been paid back, ordinarily a period of 1 or 2 years. Thus replacement rates shown are higher at age 65 than at age 80.

The difference early retirement provisions make in replacement rates is highlighted in Table 3. Civil service retirement and military retirement, both of which allow early retirement with unreduced benefits, show high replacement rates even with early retirement. (The hypothetical private pension plan included in these examples for comparison purposes permitted retirement at age 55, but with substantially reduced benefits. Since social security benefits do not start until at least age 62, at age 55 this shows only the effect of the private pension.) By age 80, the private pension and military retirement

recipients have begun receiving social security in addition to their other pension, thus boosting their overall replacement rates.

Table 3. AFTER-TAX REPLACEMENT RATES (AGE 55 WITH 30 YEARS OF WORK)

	Age 55		Age 80	
	Low earner	High earner	Low earner	High earner
Civil service retirement	68.3	83.6	60.2	60.8
Military retirement (includes social security at age 62)	65.0	74.0	104.6	95.6
Private pension plus social security	16.3	29.8	42.8	29.8

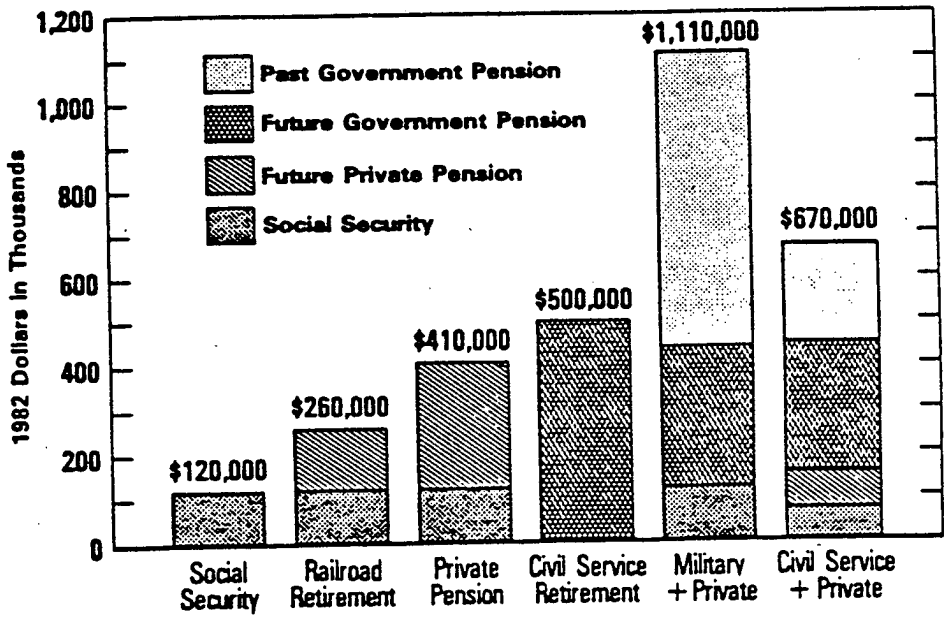
Source: See Table 1, p. 33.

In addition to giving some indication about the size of replacement rates, the previous analysis should serve to suggest the difficulty of this type of analysis. For example, replacement rates would seem to be adequate for those with 40 year work histories who retire at age 65. Shorter work histories and younger retirement ages, probably more typical now, would show lower replacement rates. In addition, the replacement rate for the CSRS is much higher at retirement than it is just a year or two later when the benefits begin being taxed. Replacement rate analysis can and should be done as one way to assess changes and options. The presentation here should be viewed only as an introduction to the topic, suggesting the significance of this type of analysis.

4. Value of Benefits. Replacement rate analysis is only one way to assess benefit adequacy. Another, not used as much, can look at the total discounted value of benefits earned at the time of retirement. Over a lifetime of work, an individual accrues rights to a stream of benefits to be received upon retirement and continuing on until death. This stream of benefits can be thought of as an asset whose value can be calculated. The asset value is the sum of the present value of the future stream of benefits, plus the compounded value of benefits already received from programs permitting early retirement.

The following chart displays these asset values for workers retiring at age 65 with 40 years of work and a final income of about $42,600 in 1982 dollars (salary of the "middle" income Federal workers, GS-13, used in this example for all programs.)

VALUE OF BENEFIT AT AGE 65



Source: See Table 1, p. 33.

Benefits earned by a 40 year, 65 year old Federal government retiree are estimated at about $500,000, only slightly higher than his counterpart in the private sector. These values are substantially above social security by itself at $120,000--driving home the point once again that social security should not be thought of as sufficient retirement income by itself. The railroad retirement private pension component is less generous than the other programs considered for these medium-income workers. The value of the benefit to the hypothetical railroad retiree would be $260,000.

The variation in total program benefits is seen most dramatically for programs permitting early retirement benefits. For the military retiree, benefits have been received for 20 years, compounding to yield an amount which when combined with the future annuity amount, is over $1 million. Early retirement benefits in civil service retirement are added to future annuities in the same way, except that it would only be for 10 years. The combination of compounded payments to age 65 together with the present value of future benefits would total approximately $670,000 for civil service. These past benefit payments add greatly to the overall asset values and explain why these two programs are more costly than the others, as will be discussed in the next section.

In summary, income adequacy as a goal raises difficult program design issues, particularly in comparing features of the new system with those of the current system. If the measure used is replacement rates, it will be difficult to design a pension program which meets private sector standards for IRS qualification and at the same time provides replacement rates to higher earning employees at the same level that the current system does without exceeding the cost of the present system. If the Congress decides on a pension system, which when combined with social security costs less than the current system, and if

the program is to be "integrated" with social security, then higher earnings employees under the new system could have substantially lower replacement rates than their current system counterparts.

C. COSTS AND FINANCING

1. Measurement of Costs. During these years of $200 billion budget deficits stretching as far as the eye can see, the cost of all Federal programs has fallen under close scrutiny. Section II above noted that the cost of the civil service retirement system has become a serious issue in recent years. There are several reasons: (1) Most studies have concluded that the CSRS costs more than prevailing practice in the private sector; (2) Outlays for the CSRS have risen rapidly since 1970; (3) The absolute size of the program is relatively large and it falls in a budget category along with other entitlement programs that are considered to be relatively "uncontrollable" spending; (4) The size of the "unfunded liability" has been highlighted by Office of Personnel Management news releases and (5) Employees pay one-fifth of the cost of their pension, with the taxpayers paying the other four-fifths.

Accompanying this list of cost problems is a list of cost concepts nearly impenetrable to the layman. It is safe to predict that during the upcoming debate on civil service retirement different cost totals and concepts will confuse the issues.

An additional barrier to understanding emerges from the difficulty of distinguishing the issues of cost from those of financing. In other words, how much the system costs is a different question from determining how to pay its costs. When the concept of financing enters the picture, questions about meaning and effects of trust funds and the meaning and effects of unfunded liabilities, also enter.

The analysis in this paper refers to the cost of civil service retirement as the discounted value of benefits earned. This is a simple concept but because of the different ages of employees and different amounts of benefits earned at any particular time, agreement on a particular concept to measure the cost of a pension system is not clear cut. The cost concept emphasized in this paper is what actuaries call the "entry age normal cost" system. This methods starts with a group (cohort) of employees just starting work and calculates based on the rules of the current pension system, how much they will "earn" in total benefits until they all retire or otherwise leave the system, and until the last one dies. These earned benefits are discounted to the present using assumed rates of interest and this discounted value of benefits is compared to a similarly discounted value of the projected total wages and salaries paid to the same group of employees over their working years (with specific assumptions for how many become disabled, how many retire early, etc.) The resulting ratio (discounted benefits divided by discounted wages and salaries) is the cost of the benefits--stated as a "percent of payroll." (These long run costs are best stated as a percent of payroll because absolute dollar figures, even with relatively modest rates of inflation, become so large far into the future that the frame of reference is lost.) Using this method, the entry age normal cost for the current civil service retirement system is 36.52 percent for 1982, (according to the most recent estimate of the Office of Personnel Management.)

This is the generally accepted costing method and is the one most used for valuing a pension system's long run cost. It is used by the Office of Personnel Management and other private and public evaluators of the CSRS. These long run costs are important because employees working today are earning rights for pension benefits that will become payable in future years.

Another important cost concept that is also used in CSRS analysis is the budget cost. In doing budget analysis, projections of costs are made for no more than 6 years into the future, a long time for most programs, but a very short time for pension programs, whose actuaries do estimates of costs 75 and more years into the future. These short run budget figures are also important, and it is well to keep in mind that for any paticular year they represent rights earned in previous years. While Congress has the legal authority to devalue these earned rights, based on past experience it is unlikely to do so. 16/ The practices seem to have been that changes in pension programs should be made only as they affect benefit rights earned in the future, whether the employment be in the public or private sector.

A final distinction is often made in talking about pension costs. Actuaries present data in the form of cost to the employer as opposed to the overall cost of the benefits rights earned. Thus, when the costs of the CSRS are displayed, the amount of the employee contributions is often subtracted to yield what is called the cost to the employer. For example, the cost the Government as employer of the CSRS is 35 percent minus 7 percent (employee contributions), leaving a figure of 28 percent.

The amount of employee contributions to require in a new pension system would be controversial, although the recent legislation (P.L. 98-168) may have helped to settle that issue. The significant point to make is that the amount of employee contributions has nothing to do with the amount of benefit rights that accrue from a defined benefit pension. This is true not just for civil service retirement but for social security and defined benefit private pension

---

16/ Financing Work-Related Entitlements. Legal Rights of Individual Under the Social Security Program and Federal Retirement Programs as contrasted with Private Sector Counterparts, by Kathleen S. Swendiman. p. 503.

systems as well. In fact, most private pensions require no employee contributions at all, but the benefit rights earned by employment are just as real. Furthermore, the military retirement system, similar to the CSRS in that the Federal Government is the employer in both cases, requires no employee contributions. This does not depreciate the value of the benefits earned in any way.

2. Financing and Trust Funds. A clear distinction should be drawn between the cost of a program and its financing. When the discussion turns from cost as the present value of benefits earned in the future (difficult concepts by themselves) to discussions of ways of financing this cost, additional difficult terminology and concepts come into play.

One reason is that pension funds are most often financed through trust funds. (The military retirement system, which previously had no trust fund, will be setting one up as a result of recent legislation.) There are two things to keep in mind about the CSRS trust fund: (1) It does not ensure the availability of funds to pay benefits at a particular level; and (2) benefits have to be paid from resources available in a particular year. Except for the possibility of affecting the national savings rate by its trust fund actions, which the civil service retirement trust fund does not do, the presence or absence of a trust fund for a Federal Government pension, has no real effect on the Government's ability or commitment to make benefit payments. In social security, as well as Federal pensions, commitments ultimately are backed up by the taxing authority of the United States Government, not assets in a trust fund.

Deciding on policy goals and designing a pension system to meet them may be impeded by public confusion and misunderstanding about the way we now pay for civil service retirement and other Federal pension and social insurance programs. There is a general, but mistaken, perception that the economic and budgetary effects of these Government trust funds are analogous to trust funds used to finance

pensions in the private sector. For private pension plans, accrued rights to benefits earned from years of work and earnings are legally enforceable rights, and the Employee Retirement Income Security Act (ERISA) has established a variety of requirements governing the accumulation and investment of reserves. Eventually, private plans should have sufficient funds to be set aside so that at the time of retirement the fund will be large enough to pay the benefits accrued; that is, they are to be "fully funded." Thus, benefits will not have to be paid out of current operating revenues.

Although similar in appearance, Federal Government trust funds do not and cannot in themselves ensure availability of funds to pay future entitlement benefits. Benefit payments for Federal pensions and social insurance programs have to be paid for in much the same way as other Federal expenditures. In this context, the payroll and other earmarked taxes are viewed as an overall source of revenue rather than a source of revenue for a particular purpose. Trust funds, for those programs that have them, function largely as a mechanism to ensure sufficient funds for making benefit payments on time without the need for annual appropriations.

While this analysis emphasizes the budgetary effects of financing Federal pensions and social insurance through trust funds, it is recognized that this emphasis ignores some features of and distinctions among trust funds that often weigh importantly in congressional policy concerning program financing. For example, a trust fund shortfall puts pressure on Congress to cut benefits. On the other hand, substantial social security trust fund balances in the past have made it easier for Congress to raise benefits, indeed, have exerted pressure (or the temptation) to raise benefits.

The social security trust fund, in contrast to the civil service retirement fund, receives almost all revenues from special earmarked payroll taxes

whose only purpose is to pay social security benefits. The special earmarking of these trust fund revenues may strengthen the political commitment to maintain payments as long as trust fund balances are positive.

In addition, while the present funding basis for civil service retirement may not fully reflect its budgetary effects, it may be desirable psychologically and, to a considerable extent, actuarially. It makes the public and the covered employees more aware of the long run costs of the system than if the Federal Government merely paid, each year, the excess of the outgo over the employee contributions.

All Federal trust fund assets consist of the Federal Government's own securities which are, in effect, IOUs the Government has written to itself. Under current law, benefits can be paid only if there are trust fund balance. However, regardless of the size of trust funds, benefit payments can be made only from funds available in a specific year--whether they come from taxes, other revenues, or money borrowed from the public. This is what is meant by a pay-as-you-go financing system: Benefits are paid by the current generation of workers and taxpayers to the current generation of retirees. Measured by economic and budgetary effects, Federal pension and social insurance programs, whether they have trust funds or not, are de facto pay-as-you-go systems.

The total size of the obligations for benefit payments does not depend on whether or not program benefits are paid through a trust fund. It depends instead on the eligibility and benefit rules set up in the program's authorizing legislation. For instance, as noted above, the entitlement to military retirement benefits is no more or less binding than the entitlement to civil service retirement benefits, although the military retirement system has no trust fund at all while the civil service retirement system has a relatively large and growing trust fund. The requirement to pay beneficiaries their legally specified

amount at the legally specified time does not depend on the existence or non-existence of a trust fund. Further, the entitlement to benefits in both programs is established by legislation and can be changed for both programs by Congress.

In the civil service retirement and military retirement programs, the Federal Government is not only the payer of benefits, but the employer as well. Trust funds become even less significant when used in such programs. Military retirement will have no trust fund at all until 1985 and payments will simply be made each year from general fund appropriations. This procedure did not prevent the calculation of total benefit obligation--nearly one-half trillion dollars. If the military retirement system ceased enrolling new members today, payment of accrued entitlement benefits would have to be made, subject to subsequent changes in law, until the last beneficiary was removed from the rolls.

The civil service retirement system does have a trust fund, but calculation of the total amount of the Government's accrued obligation for civil service retirement is similar to that of military retirement. However, its financial arrangements are substantially different. Only part of the total obligation is "unfunded" in an actuarial sense, with the remainder being funded (on the books of the Federal Government) by assets held by the civil service retirement trust fund and by future earmarked employer and employee contributions. As long as the trust fund assets are invested in the Government's own securities, adding to these assets does not constitute budget outlays, and conversely does not prefund retirement benefits.

Any trust fund size or buildup has no effect by itself on Federal outlays or deficits now or in the future. These are determined by the benefit to which workers and retirees become entitled--the same as in the military retirement system. Measures taken by the Government as employer to prefund result in IOUs the Government writes to itself. The obligation to make payments follows from

the provisions of the benefit formula, not from trust fund balances. The civil service retirement and the military retirement program could be fully funded on the books of the Government without changing the size of Government outlays or the Federal deficit in any way.

The civil service retirement system financing procedures have confused many. A commonly held view is that the pensions should be fully paid for by employees and employers. However, as long as the Government as employer invests trust fund assets in its own securities, the idea of prefunding has little economic or budgetary meaning. Furthermore, in a pay-as-you-go system, increasing the amount of employee contributions would simply result in requiring Federal workers to pay more of the cost of benefits to retired employees rather than having these benefits paid by taxpayers in general.

3. The Fund and the Unfunded Liability. If the important analytical concept is the total value of the civil service benefit obligation accrued, and if this obligation could be prefunded only with Government IOUs to itself, why are some critics concerned about the "unfunded liability"? It follows from the previous analysis that whether the liability is funded or unfunded makes no real difference when the fund is built from sources that are internal to the Government. A brief explanation of the term, "unfunded liability" will be followed by a discussion of how the current CSRS financing (through its trust fund) works.

It has been asserted that CSRS's unfunded liability represents a menace to the entire economic well-being of the nation. Unfunded liability is defined as the difference between the projected future assets of the fund and its projected liabilities. It is argued that this unfunded liability in CSRS represents a growing, unmanageable, and unconscionable threat to future taxpayers.

The term, "unfunded liability" sounds ominous, and in the private sector high unfunded liabilities would constitute a significant threat to beneficiaries

as well as plan sponsors. However, the term refers to a complex actuarial concept that in this system is used strictly to regulate the flow of budget authority into the system's disbursing mechanism. Actually, a far more important concept is system "liabilities" both funded and unfunded, the measurement of which is rather sensitive to the assumptions and methods used to establish it. This paper maintains that it will be more productive to concentrate on the effect upon the total liability arising from the various operations of the CSRS and compare these effects to the various alternative operations that could take their place.

The civil service retirement system trust fund has grown over the years. Sources of revenues to this trust fund are mainly internal to the Government, as table 4 shows. During 1983 through 1992, total income to the trust fund is projected at $498 billion. Of this, 13 percent is from employee contributions, 28 percent from interest on trust fund assets, and 59 percent from other Government transfers. Only the 13 percent from employee contributions comes from outside the Government.

Changes made to CSRS financing in 1969 enabled the civil service retirement trust fund to grow rapidly during the 1970s, when trust funds financed by payroll taxes were having difficulty. In 1969, the Congress considered the issue of the unfunded liability of the civil service retirement system. Congress decided to make paper transfers (issue special notes or IOUs to itself) to the civil service retirement trust fund in sufficient amount to keep the fund growing. These transfers were for interest that would have been earned if the unfunded liability had been funded, amortization of certain unfunded liabilities, agency contributions, and interest on transferred assets. Interest on the unfunded liability and interest on assets have been growing, and along with them the trust fund. Congress also built up the trust fund by amortizing additions to the unfunded liabilities caused by new or liberalized benefits (except

cost-of-living adjustments), extension of coverage to previously uncovered employees, and increases in salaries on which benefits are computed. Employee and agency contributions were increased from 6.5 to 7 percent.

TABLE 4. INCOME TO THE CIVIL SERVICE RETIREMENT FUND
(In billions of dollars)

Year	Employee contributions	Agency contributions	30-year amortization payments	Interest on unfunded liability	Military payment	Investment income	Total income
1983	4.7	4.7	5.1	9.8	1.5	9.7	35.5
1984	5.0	5.0	6.0	10.5	1.7	10.8	39.0
1985	5.4	5.4	6.9	10.9	1.8	11.8	42.2
1986	5.8	5.8	7.7	11.2	1.9	12.7	45.1
1987	6.2	6.2	8.6	11.6	2.0	13.5	48.1
1988	6.6	6.6	9.5	12.0	2.1	14.3	51.1
1989	7.1	7.1	10.5	12.4	2.1	15.1	54.3
1990	7.5	7.5	11.5	12.8	2.2	16.0	57.5
1991	8.0	8.0	12.5	13.2	2.3	16.8	60.8
1992	8.4	8.4	13.5	3.6	2.4	17.7	64.0
Total ...	64.7	64.7	91.8	118.0	20.0	138.4	497.6

Source: See Table 1, p. 33.

Table 5 shows the operations of the civil service retirement program from two perspectives: effect on the unified budget and effect on the trust fund.

TABLE 5. RECEIPTS AND EXPENDITURES FOR CIVIL SERVICE RETIREMENT--1983-92: BUDGET PERSPECTIVE AND TRUST FUND PERSPECTIVE
(In billions of dollars)

	Assumptions
	II-B
Receipts and expenditures:	
Budget expenditures	325.6
Receipts	64.7
Excess of expenditures over receipts a/	260.9
Trust fund perspective:	
Income to the trust fund	497.4
Budget expenditures	325.6
Net increase in fund	171.8

a/ $30 billion of this will come from Postal Service contributions.

Source: See Table 1, p. 33.

Of the total benefit payments of $325.6 billion during 1983-92, one-fifth or $64.7 billion will come from employee contributions. The remaining $260.9 billion will come from tax revenues or borrowing. During the same period, the trust fund financing mechanism will result in a net addition to the trust fund of $172 billion.

In effect, the trust fund is owed by the Federal Government to itself. The civil service retirement program affects the Federal budget deficit and the economy by the extent to which its outlays for benefit payments each year differ from employee contributions that year.

The size of the trust fund and the amount of the unfunded liability do not affect outlays or the budget deficit now or in the future if trust fund assets are invested in the Government 's own securities. Eligibility requirements and benefit formulas, both established by statute, determine the extent of the Government 's obligation to make payments.

Before ending this discussion of pension obligations and their funding, it should be noted that it is possible to think of other Government programs as establishing obligations for the future also. OPM press releases compare the unfunded liabilities of the civil service and military retirement to the national debt. One could just as easily compare the discounted present value of the food stamp program, or of Federally funded agricultural or medical research, or of military expenditures to the national debt or to anything else. Without putting too fine a point on it, pension and social insurance programs are not the only ones which imply future obligations. Even those who say the Federal Government is too large at present are not advocating its elimination, only its reduction. For example, the current administration has advocated reductions in overall Federal expenditures not to zero, but until they reach 19 percent of GNP. 17/

Nor can it be argued that the obligation for pensions and social insurance differs in kind from the obligations for other Government expenditures. There is a difference in degree, certainly, but as noted above, the Congress does have

---

17/ U.S. Office of Management and Budget. A Program for Economic Recovery. Feb. 18, 1981. p. 11.

the authority, if it chooses, to reduce social insurance and pension entitlements as well as other expenditures.

4. How to Settle on the Cost of a New System. The cost of the current civil service retirement system is, by conventional measures, around 35 percent of payroll, using the entry age normal cost system and dynamic assumptions. Based on this cost figure, the CSRS has been criticized as too expensive, as substantially more expensive than prevailing pension plans in the private sector. Against these assessments are rebutting arguments made by groups representing Federal employees during last year's debate on the Social Security Amendments of 1983 that the CSRS really only costs about 14 percent of payroll, that the Federal employers and employees each pay 7 percent of this, and that the system started having problems because the Federal Government did not pay its full share in the early days of the program. 18/

The President's budget for 1984 included proposals that would have reduced the cost of the CSRS from its current 35 percent down to 22 percent, and would have increased employee contributions until they were 11 percent (from the current 7 percent) which when combined with a matching 11 percent from employers would exactly fund the new reduced system.

What do we make of all this?

Without getting too much into the technical details another word needs to be added about the different kinds of actuarial costs. Actuaries talk about "dynamic" and "static" costs, in making their estimates. There is a big difference. The 35 percent entry-age normal cost figure is arrived at using "dynamic"

18/ Moe Biller. President of the American Postal Workers Union. Testimony before the House Subcommittee on Social Security of the Ways and Means Committee. Feb. 8, 1983.

assumptions, while the 14 percent entry-age normal cost relies on "static" assumptions. The big difference is that dynamic assumptions assume continued inflation and real wage growth while static assumptions do not. Intuitively, one would say that, of course, if inflation and wage growth add to pension costs they ought to be included. The bulk of actuarial opinion appears to favor this view. In fact, all of the large Federal systems, including social security, are valued using dynamic assumptions.

However, the issue is not so clear cut as it might seem to be. Until recently, the Federal system, contrasted with private and with State and local government pensions, have been fully and automatically protected against price inflation by having cost of living adjustments (COLA) tied to increases in the consumer price index (CPI). Private and State and local government pension systems do not have full and automatic COLAs even though most of them do make ad hoc adjustments to take account of inflation. The point is that the Federal systems are valued based on economic assumptions that include the effects of postretirement inflation, while others are not. And this is a large difference.

These points are technical, but bear importantly on the issues, because cutting back on the COLAs seems to be the way the Congress has seen to be most appropriate when reductions need to be made in Federal pension and social insurance programs. Technically, the Congress has not devalued already earned rights, because full and automatic adjustments to what are called post entitlement benefits are not earned until the benefits are increased.

Given all these difficulties in measurement, the Congress is still left with the question of deciding how much the new pension system should cost (and whether to deal implicitly or explicitly with whether the cost of the current system is excessive). The parameters would seem to be as follows:

1. To target the cost of the new pension system at about the same as

the current system--or 35 percent of payroll (dynamic assumptions). While it would not be exact, it becomes a fairly simple matter to devise the supplemental pension which, when combined with social security, would give about this cost. Many difficult questions of program design would still remain, depending on which of the system objectives goals were thought to be paramount.

2. To pattern the cost of the new CSR pension, when combined with social security, at approximately the cost of pensions in the private sector. This generally implies cutting back on Federal pension costs. This approach has a great deal of conceptual appeal but has formidable problems associated with measuring the cost of the "typical" private pension. In the first place, there is no such thing as typical private practice. There are over 500,000 pension plans in the United States and almost as many variations in them. Even if it were possible to isolate and agree on a set of typical provisions and value them, it is not clear that the values would be comparable unless they were valued by using a common set of economic assumptions and a common demographic data base. The recent proliferation of company sponsored capital acumulation plans (such as thrift plans, 401(k) plans, etc.) would make it even more difficult to ensure that all these costs are captured in the comparison. (They are part of the retirement income package offered by many large corporations and, though not offered to Federal employees, should be considered in the value comparison.) The data base itself raises another problem. What set of private sector employers would it be appropriate to compare Federal employees to for purposes of this comparison? Some argue that it should be an average of all employers, large and small. Others argue that it should only be the larger employers because these are the ones the Federal government competes with for many types of employees and whose work environment is more nearly similar. It is assumed, although even this question has not been analyzed

conclusively, that pension benefits of some small employers are smaller than those of large private employers. If there is such a difference, difficult judgments will be required to settle the question.

If Congress were to peg the cost of the new system on prevailing pension practice in the private sector, the cost of the new system, when combined with social security would be substantially less than the current CSRS. (There would be many ways to reduce costs. Since the single most expensive feature of the current system is its full and automatic COLAs, the new system would be less expensive if it promised less than full and automatic COLAs.) Several State governments, facing funding problems in their pensions, have done this very thing. They have begun new pensions for future workers with lower costs than the existing system.

A serious concern, if this were to be done, is that, while the current CSRS is more expensive than private practice, Federal employees still have less "total compensation" than private workers, according to most studies. (OPM disagrees.) In his Brookings study, Robert Hartman argues that the pension sytem should be cut back to be more nearly comparable to private practice; that Federal salaries, particularly at the top levels be substantially increased to be more competitive. Mr. Hartman does not say what he would propose to do with the pension system in the absence of corresponding increases in salaries. The studies indicate that not only have Federal employees fallen behind in total compensation, they are also falling behind in the nonretirement aspect of total noncash compensation. Recent studies by the Congressional budget Office and Hay Associates have concluded that although Federal pensions are more costly than their private sector counterparts, recent cutbacks in health insurance benefits and other noncash benefits accompanied by a lower relative salary base, which directly affects most benefits, have pulled Federal workers about even with private sector employees in total noncash benefits even

though the Federal pensions, as a part of this total, are clearly more valuable.

Thus, before settling on a new pension plan for Federal workers covered by social security, its effect on total compensation should be examined, considering the effect that a cut in total compensation would have on the type and quality of employees.

EBRI

SOURCES OF ECONOMIC SECURITY

---TABLES---

A Presentation for the United States Senate Committee on Governmental Affairs Subcomittee on Civil Service, Post Office and General Services

POLICY FORUM

on

ECONOMIC SECURITY PROGRAMS
December 13, 1983

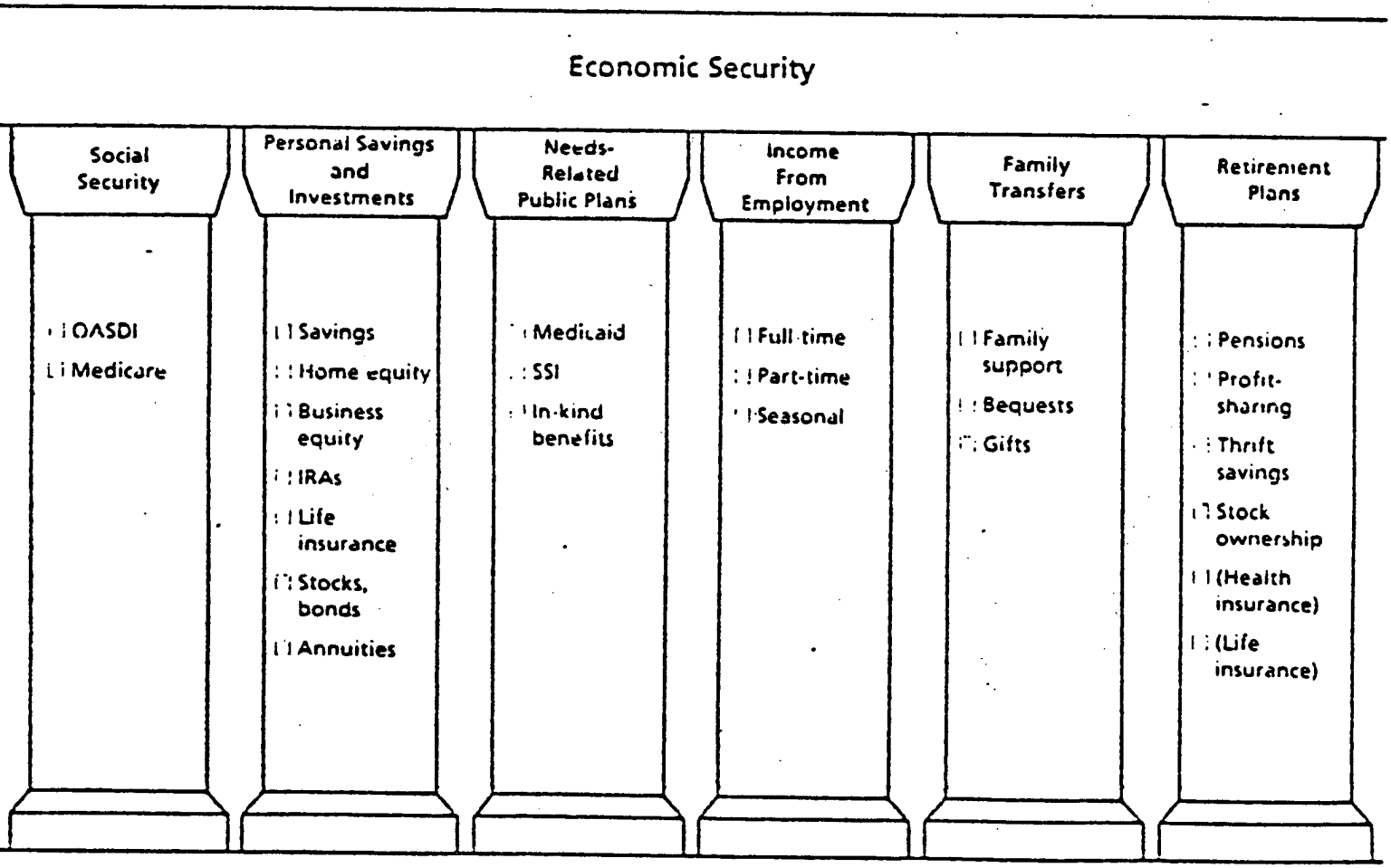
Prepared by: Employee Benefit Research Institute

Presented by: Dallas L. Salisbury, President

EMPLOYEE BENEFIT RESEARCH INSTITUTE
1920 N Street, NW/Suite 520/Washington, DC 20036/Telephone (202) 659-0670

Approved For Release 2008/08/21 : CIA-RDP86B00338R000400510001-3

The Six Pillars of Economic Security



	Percent Receiving	Total Income from Each Source[2] (billions)	Average Income[3]
Social Security	92%	$ 66	$4,300
Employer Pensions	34	23	4,100
Savings/Wealth	71	36	3,000
Employment Earnings	31	49	9,500
Public Assistance/In-Kind Programs	95	43	2,200
Total	N/A	$217	N/A

Source: ICF analysis for EBRI of the March 1980 Current Population Survey data.

[1]Elderly households consist of married couples with a head age 65 and over and single persons age 65 and over.

[2]Total income provided to all elderly from each source listed.

[3]Average amount from each source provided to households, which receive income from the particular sources noted.

[1]ICF estimates derived from data presented in U.S. Social Security Administration, *Demographic and Economic Characteristics of the Aged* (1975).

TABLE I-2
OASI Beneficiaries and Benefit Payments—1980

	Beneficiaries (millions)	Benefit Payments (billions)	Average Benefit
Retired Workers	19.1	$ 74.3	$4,100
Wives and Husbands	3.0	5.8	2,100
Children	3.1	8.2	2,600
Widowed Mothers	0.6	1.6	2,900
Widows and Widowers	4.4	15.2	3,700
Other	0.1	0.2	1,500
Total	30.3	$105.3	$3,700

Source: U.S. Social Security Administration, *Social Security Bulletin*, vol. 44, no. 4 (1981), pp. 48–49.

TABLE I-3
Age 65 Social Security Pretax Replacement Rates—1979

	Single Worker	Worker with Dependent Spouse
Maximum Covered Wage Earner	25%	38%
Average Covered Wage Earner	44	65
Full-Time Minimum Wage Earner	57	85

Source: U.S. Department of Health and Human Services, Advisory Council on Social Security, *Social Security Financing and Benefits* (1979), p. 59.

[4]The Social Security minimum benefit has been eliminated for all persons retiring after January 1, 1982.

Relation Between Preretirement Earnings and Postretirement Social Security Benefits 65-Year Old Workers at Different Earnings Levels—1982

	Maximum Earner[1]		Average Earner[2]		Full-time Minimum Wage[3]		Half-time Minimum Wage[4]	
	With Dependent Spouse	Single	With Dependent Spouse	Single	With Dependent Spouse	Single	With Dependent Spouse	Single
Preretirement 1981								
Gross monthly earnings	$2,475	$2,475	$1,129	$1,129	$581	$581	$290	$290
Less: taxes and expenses	859	1,048	276	339	96	133	37	39
Disposable earned income	1,616	1,427	853	790	485	448	253	251
Postretirement 1982								
AIME	$1,258	$1,258	$ 847	$ 847	$459	$459	$229	$229
January PIA	606	606	476	476	319	319	226	226
Average monthly benefit per year	940	627	739	493	495	330	351	234
Plus: SSI	0	0	0	0	0	0	41	34
Replacement Rates								
OASI benefit/gross earnings	38%	25%	65%	44%	85%	57%	121%	81%
OASI and SSI benefits/net earnings	58%	44%	87%	62%	102%	74%	155%	107%

Source: Social Security Financing and Benefits: Report of the 1979 Advisory Council on Social Security (Washington, D.C., 1980), p. 49.

[1]Worker has always earned maximum level taxable under Social Security.
[2]Worker has always earned average earnings in employment covered by Social Security.
[3]Worker has always worked full-time at the Federal minimum wage.
[4]Worker has worked 50 percent of the time at the Federal minimum wage.

OASI Benefits—1950 to 1979[1]

Year	Beneficiaries (millions)	Total Benefits (millions)	Average Benefit	Real Average Benefit (1979 dollars)
1950	3.5	$ 961	$ 276	$ 832
1955	8.0	4,968	624	1,691
1960	14.2	10,677	754	1,848
1965	19.1	16,737	875	2,013
1970	23.6	28,796	1,222	2,284
1975	27.7	58,509	2,110	2,846
1979	30.3	90,556	2,984	2,984

Source: U.S. Social Security Administration, *Social Security Bulletin Annual Statistical Supplement, 1977-79*, pp. 66–67.

[1]These estimates are different from those in Table I-1 because they include beneficiaries of all ages.

TABLE I-5
Benefits and Beneficiaries in Employer Pension Programs—1979[1]

Employer Plans	Beneficiaries (millions)	Percentage of Elderly Households Receiving	Benefit Payments (billions)	Average Benefits
Private	8.7	23%	$23.6	$2,700
State/Local	2.3	8	10.8	4,700
Civil Service	1.6	4	12.5	7,700
Military	1.3	1	10.3	8,000
Subtotal	13.9	34%	$57.2	$4,100
OASI	30.3	92%	$90.6	$3,000

Source: See tables in Appendix A.

[1]Estimates of beneficiaries, benefit payments and average benefits presented in this table include beneficiaries of all ages. They, therefore, differ from those in Table I-1.

TABLE I-6
Private Sector Employer Pension Programs—1950 to 1979

Year	Beneficiaries (thousands)	Total Benefits (millions)	Average Benefit	Real Average Benefit (1979 dollars)
1950	450	$ 370	$ 822	$2,479
1955	980	850	867	2,350
1960	1,780	1,720	966	2,368
1965	2,750	3,520	1,280	2,945
1970	4,740	7,360	1,553	2,899
1975	7,115	14,850	2,087	2,815
1979	8,700	23,600	2,713	2,700

Sources: Alfred M. Skolnik, "Private Pension Plans, 1950–1974," *Social Security Bulletin*, vol. 39, no. 6, June 1976, pp. 3–17. American Council of Life Insurance, *Pension Facts* (Washington, D.C., 1977), pp. 30–31, 36. Private pension values for 1979 were derived from ICF Incorporated, *A Private Pension Forecasting Model*, 1979.

[1]Profit Sharing Research Foundation, "Cumulative Growth in Number of Qualified Deferred Profit Sharing Plans and Pensions in the U.S. 1939 Through 1980" (Evanston, Il.

Year	Beneficiaries (thousands)	Total Benefits (millions)	Average Benefit	Real Average Benefit (1979 dollars)
1955	427	$ 595	$1,393	$4,200
1960	660	1,078	1,633	4,002
1965	886	1,775	2,003	4,608
1970	1,291	3,280	2,541	4,750
1975	1,730	7,025	4,061	5,477
1979	2,300	10,770	4,683	4,683

Sources: U.S. Social Security Administration, *Social Security Bulletin Annual Statistical Supplement, 1977–79*, pp. 66–67; American Council of Life Insurance, *Pension Facts* (Washington, D.C., 1980), table 15.

TABLE I-8
Benefits under the Federal Civil Service Retirement System—1955 to 1979

Year	Beneficiaries (thousands)	Total Benefits (millions)	Average Benefit	Real Average Benefit (1979 dollars)
1955	297	$ 380	$1,279	$3,857
1960	515	814	1,581	3,875
1965	729	1,385	1,900	4,371
1970	959	2,838	2,959	5,531
1975	1,372	7,056	5,143	6,936
1979	1,617	12,380	7,656	7,656

Sources: U.S. Social Security Administration, *Social Security Bulletin Annual Statistical Supplement, 1977–79*, table 16, pp. 66–67; American Council of Life Insurance, *Pension Facts* (Washington, D.C., 1980), table 13, pp. 26–27.

TABLE I-9
Benefits under the Military Retirement System—1955 to 1979

Year	Beneficiaries (thousands)	Total Benefits (millions)	Average Benefit	Real Average Benefit (1979 dollars)
1955	179	$ 419	$2,341	$7,059
1960	256	694	2,711	6,645
1965	484	1,384	2,860	6,580
1970	773	2,849	3,686	6,890
1975	1,073	6,242	5,811	7,845
1979	1,286	10,279	7,993	7,993

Source: U.S. Department of Defense, Defense Manpower Data Center, Office of Actuary.

Percentage of Families with Family Head Age 64 to 69 with Assets—1975

Type of Asset	Percentage Holding	Median Value of This Asset for Those with Asset (1979 dollars)
Liquid Assets	81%	$ 7,300
Life Insurance, Annuities	75	5,100[1]
Home Equity	69	27,000
Illiquid Assets	24	13,500
Any of Above Assets	89	33,100

Sources: Joseph Friedman and Jane Sjogren, "The Assets of the Elderly As They Retire" (Cambridge, Mass.: Abt Associates, Inc., 1980), pp. 15, 36, 46, 49 and 66. Median value of assets in 1979 dollars estimated by ICF Incorporated.

[1]This estimate reflects the cash value rather than the face value of these policies.

TABLE I-11
Labor Force Participation Rates for Men—1950 to 1980

Age Group	1950	1960	1970	1980
55–59	87%	88%	90%	83%
60–64	79	78	75	61
65 and over	39	29	27	20

Source: U.S. Department of Labor, Bureau of Labor Statistics.

[17]EBRI, *Coverage and Benefit Entitlement*, p. 57.

[18]ICF analysis of the May 1979 Current Population Survey data.

TABLE I-12
Percentage of Workers Who Work Part-Time—1977

	25–54	55–59	60–64	65 and Over
Men	4%	4%	10%	48%
Women	28	27	35	62
Total	14%	14%	20%	54%

Source: U.S. Department of Labor, Bureau of Labor Statistics, "Work Experience of the Population in 1977," Special Labor Force Report no. 224, p. A-7.

TABLE I-13
Public Assistance and In-Kind Benefit Program for the Elderly—1980

Programs	Elderly Individuals Participating (millions)	Level of Benefits (millions)	Average Benefits per Participant
Medicare	24.5	$28,300	$1,200
Medicaid	5.1	4,300	800
SSI	1.9	2,400	1,300
Subsidized Housing	1.3	1,600	1,200
Energy Assistance	1.9	700	400
Food Stamps	1.0	600	600

TABLE I-14

	Married Couples	Single Persons	All Elderly Households
Less than $2,500	2.0% (2.0)	9.1% (9.1)	5.8% (5.8)
$2,500–4,999	10.7 (12.7)	39.4 (48.5)	26.1 (31.9)
$5,000–9,999	31.9 (44.6)	29.8 (78.3)	30.8 (62.7)
$10,000–14,999	23.5 (68.1)	10.2 (88.5)	16.4 (79.1)
$15,000–24,999	18.8 (86.9)	7.4 (95.9)	12.6 (91.7)
$25,000 and over	13.2 (100.0)	4.0 (100.0)	8.2 (100.0)
Total	100.0%	100.0%	100.0%

Source: ICF analysis for EBRI of the March 1980 Current Population Survey data.

[1]Cumulative distribution in parentheses.

TABLE I-15
Cumulative Cash Income Distribution of the Elderly, By Marital Status and Age—1979

	Married Couples Age		Single Persons Age	
	65–72	Over 72	65–72	Over 72
Less than $2,500	1.9%	2.1%	9.1%	9.1%
Less than $5,000	10.8	15.5	43.8	52.1
Less than $10,000	37.4	55.6	74.9	81.0
Less than $15,000	61.9	77.4	86.7	90.0
Less than $25,000	84.1	90.9	95.5	96.3
Total	100.0%	100.0%	100.0%	100.0%

Source: ICF analysis for EBRI of the March 1980 Current Population Survey data.

age 72. Employment income earned by those age 65–72 explains most of this difference.

Much of the income variation is explained by income sources. High-income elderly families generally receive income from different sources, and from more sources than low-income families. Social Security income was received by over 90 percent of all households. As shown in Table I-16, except for those with the lowest and highest incomes, more than 90 percent

TABLE I-16
Percentage of the Elderly Receiving Cash Income, By Source—1979[1]

	Employment Earnings	Social Security	Employer Pensions	Income from Assets	Government Assistance	Other Government Programs	Other
Less than $2,500	6%	69%	4%	32%	23%	3%	2%
$2,500–4,999	9	94	10	49	24	8	2
$5,000–9,999	24	96	37	75	6	10	3
$10,000–14,999	42	95	55	87	4	10	4
$15,000–24,999	60	91	52	88	4	10	5
$25,000 and over	75	80	52	94	2	10	5
All Elderly	31%	92%	34%	71%	11%	9%	3%

Source: ICF analysis for EBRI of the March 1980 Current Population Survey data.

[1]Percentages are based on the number of married couples with a head-of-household over age 65 and single persons over age 65.

TABLE I-17
Elderly Households, By Earnings Status—1979

	With Employment Earnings	Without Employment Earnings	Total
Less than $2,500	1.2%	7.8%	5.8%
Less than $5,000	8.8	42.1	31.9
Less than $10,000	32.9	75.9	62.7
Less than $15,000	55.0	89.7	79.1
Less than $25,000	79.8	96.9	91.7
Total	100.0%	100.0%	100.0%

Source: ICF analysis for EBRI of the March 1980 Current Population Survey data.

TABLE I-18
Working Status of the Elderly, By Age and Marital Status—1979

	Married Couples			Single Persons		
Work Status	65–69	70–72	73 and Over	65–69	70–72	73 and Over
Full-Time	14%	6%	3%	7%	4%	1%
Part-Time	26	23	12	21	13	6
No Work	60	71	85	72	83	93
Total	100%	100%	100%	100%	100%	100%

Source: ICF analysis for EBRI of the March 1980 Current Population Survey data.

TABLE I-19
Cumulative Distribution of Cash Income, By Marital Status, Work Status and Age—1979

	Not Working			Part-Time Work			Full-Time Work	
	65–69	70–72	Over 72	65–69	70–72	Over 72	65–69	Over 69
Married Couples								
Less than $2,500	2.7%	1.8%	2.0%	0.8%	0.5%	3.1%	1.9%	0.5%
Less than $5,000	14.0	14.9	17.0	5.5	4.1	9.0	3.8	1.1
Less than $10,000	43.8	50.8	59.8	25.9	27.2	36.6	11.5	14.0
Less than $15,000	71.3	74.5	81.7	50.7	58.1	61.1	21.8	29.1
Less than $25,000	90.1	93.1	93.6	78.5	77.9	84.1	55.1	55.5
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Single Persons								
Less than $2,500	12.0%	11.2%	9.5%	4.1%	3.6%	4.1%	3.5%	N/A
Less than $5,000	50.3	54.4	54.1	26.7	22.1	27.8	8.4	N/A
Less than $10,000	79.1	82.9	82.2	67.1	71.9	67.8	31.7	N/A
Less than $15,000	88.4	92.9	90.9	83.8	87.9	80.1	59.7	N/A
Less than $25,000	96.2	97.0	96.9	94.2	95.8	91.1	87.0	N/A
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	N/A

Source: ICF analysis for EBRI of the March 1980 Current Population Survey data.

Relative Contribution of Retirement Income Sources for the Elderly—1979[1]

Cash Income in 1979	Employment Earnings	Social Security	Employer Pensions	Income from Assets	Government Assistance and Other	Total
Less than $5,000	3%	76%	3%	6%	12%	100%
$5,000–9,999	10	59	12	15	4	100
$10,000–14,999	18	43	17	19	3	100
$15,000–24,999	34	26	16	22	2	100
$25,000 and over	48	11	13	27	1	100
All Elderly	27%	37%	13%	20%	3%	100%

Source: ICF analysis for EBRI of the March 1980 Current Population Survey data.

[1]Percentages are based on the number of married couples headed by an individual age 65 and over and single persons age 65 and over.

TABLE I-21
Percentage of Elderly Households Receiving Certain In-Kind Benefits—1979

	Medicare	Medicaid	Food Stamps	Housing Assistance
Less than $2,500	88%	30%	16%	12%
$2,500–4,999	95	29	16	13
$5,000–7,499	95	14	4	5
$7,500–9,999	95	12	2	3
$10,000–14,999	94	10	2	2
$15,000 and over	89	9	1	—
All Elderly	93%	16%	6%	5%

Source: U.S. Department of Commerce, Bureau of the Census. *Characteristics of Households and Persons Receiving Non-Cash Benefits: 1979*. Current Population Reports, series P-23, no. 110, pp. 12, 15, 16 and 18.

TABLE I-22
Cumulative Income Distribution of Elderly Households, Including Cash Income and In-Kind Benefits—1979

	Cash Income Only	Cash Income and In-Kind Benefits	
		Excluding Medical Benefits	Including Medical Benefits
Less than $2,500	5.8%	4.9%	3.6%
Less than $5,000	31.9	29.7	25.9
Less than $10,000	62.7	62.5	59.4
Less than $15,000	79.1	79.0	77.0
Less than $25,000	91.7	91.8	91.1
Total	100.0%	100.0%	100.0%

Source: ICF analysis for EBRI of the March 1980 Current Population Survey data. See Appendix B for details.

[2]If these in-kind benefits were valued at cost, the cumulative percentage of families with incomes:
- less than $2,500 would total 1.4 percent;
- less than $5,000 would total 15.6 percent;
- less than $10,000 would total 54.7 percent;
- less than $15,000 would total 75.3 percent;
- less than $25,000 would total 90.8 percent.

TABLE I-23
Cumulative Income Distribution of Elderly Households, Including Cash Income, In-Kind Benefits and Annuitized Wealth Income—1979

	Cash Income Only	Cash Income, In-Kind Benefits and Annuitized Wealth	
		Excluding Medical Benefits	Including Medical Benefits
Less than $2,500	5.8%	2.9%	2.3%
Less than $5,000	31.9	19.9	17.2
Less than $10,000	62.7	50.8	47.8
Less than $15,000	79.1	71.0	68.7
Less than $25,000	91.7	88.6	87.6
Total	100.0%	100.0%	100.0%

Source: ICF analysis for EBRI of the March 1980 Current Population Survey data. See Appendix B for details.

[33]This analysis attempts to provide a perspective of the cash income *potential* of personal assets. In evaluating this information, it should be understood that some elderly are unable or unwilling to convert personal assets into cash.

[34]This methodology is also described in Appendix B.

EBRI and the US Department of Health and Human Services have jointly funded a 1983 CPS update of the 1979 data reported on in these tables.

By mid-1984 all of this analysis will have been updated to reflect economic security status in May, 1983.

Defining Retirement Income Objectives

by Vincent M. Tobin, F.S.A.
Group Executive
Buck Consultants, Inc.

Retirement in good health with sufficient resources to meet the needs of the retiree and family can be a most rewarding time of life. Retirement in poor health, or with inadequate resources, can be traumatic and devastating. As leaders, as legislators, as employers, we are limited in the actions we can take to assure good health for retirees. We can be more effective in our efforts to help provide adequate financial resources to our employees if we first adopt proper retirement income objectives.

In analyzing the financial resources available to meet the needs of our retirees from an employer's point of view, we cannot only look at the traditional three-legged stool of personal savings, Social Security, and private pension; we must also look at medical insurance, including medicare. Furthermore, since our concern is not only with our retirees, but also with their dependents, we must consider life insurance and other available death and survivor benefits. As an employer deciding upon and implementing a retirement income policy, we must understand all aspects of the finances available to retirees in order to best meet our and their retirement income objectives.

SOURCES OF RETIREMENT INCOME

Of the sources of retirement income, personal savings undoubtedly has the greatest variation among individuals - even among those working for a single employer. In recent years, the availability to employees of Individual Retirement Accounts will greatly increase the portion of retirement income

from this source. (Some analysts consider IRAs as part of the pension leg of the retirement stool. In form it may be that, but in substance I believe it properly is included in the personal savings leg). IRAs for employees are too recent to have a significant impact on the retirement income of current retirees. However, each year their impact will increase. Certainly, by the year 2000, IRAs will provide a meaningful portion of many retirees' financial resources. Nevertheless, many, perhaps most, retiring employees - even in the year 2000 - may not have significant personal savings for retirement. They will be dependent on Social Security and employer-provided retirement income.

Employees in the private sector, employees of most state and legal governments, and employees of many non-profit organizations have long been covered by and eligible for Social Security benefits. New federal employees will be joining this group. The range in Social Security benefits among covered employees is less than the range in other sources of retirement income. Nevertheless, Social Security reflects a significant percentage of salary for the lower paid employee and even provides significant amounts of after-tax income for the higher paid employee since at least 50% of the Social Security benefit is tax-free.

To the extent that expenses after retirement are lower, the retiree's income needs to maintain a given standard of living are eased. Put another way: the absence of commuting costs and other work-related expenses, lower taxes, and the existence of such conditions as medical coverage under Medicare enable retirees to maintain their pre-retirement standard of living at a level of income below what they were earning when they retired. On the other hand, necessities formerly paid for by the employer must now be provided by

the retiree out of retirement income. This can be particularly significant for medical expenses for early retirees - before they are eligible for Medicare. To the extent that the employers provide medical benefits after retirement to former employees, the financial strain on their retirement income can be eased.

Medical insurance should not be considered a budgetable expense since through the combination of Medicare and employer-provided medical care, we have relieved the retiree of the major burden for this item. Nevertheless, some employees who retire early may temporarily have to incur significant medical expenses if they lose the employer-provided benefit at retirement yet are not eligible for Medicare coverage until age 65.

Earlier I referred to the retiree and family. This implies that the needs of the retirees do not end with their death. The financial needs of surviving spouses and other dependent family members continue after the retiree's death - in some cases with a substantial reduction in income. A sound retirement income policy takes into account the post-retirement death benefits that are provided. This may include either a single sum death benefit or a pension payable to the survivor for life or over an extended period.

From the employer's viewpoint, however, the pension, together with Social Security, is the key starting point in determining the adequacy of retirement income for employees. Furthermore, the pension is the only source of retirement income provided by the employer, subject to its control, and determinable in amount by the employer. A sound pension policy is the key to establishing appropriate pension goals to best meet the retirement income

needs of the workforce at a cost level most affordable to the employers. How these retirement income objectives are defined, and how they are achieved is the subject of this paper.

RETIREMENT INCOME

The general objective of a retirement income policy is to satisfy the economic needs of employees after their working career ends and they retire. Unfortunately, there are no universally accepted objective standards to determine when the employees' needs are satisfied. However, as I will discuss, there are techniques that may be helpful.

The retirement income policy of an employer may be described in a number of ways ranging from general to specific. A policy is typically found in

- the provisions of the current plan, itself,
- the historical development of those provisions,
- the granting of pension payments which are supplemental to those payable from the plan, and
- the granting of increases in pension after retirement to compensate for a deficiency created by inflation.

The sum total of the foregoing provides the extent to which the employee's pre-retirement income will be replaced by Social Security and the pension for various ages at retirement and the degree to which that ratio will not be eroded by inflation.

Pension policy indicates the relative importance of various items that are, or might be considered, in the calculation of a pension benefit.

In designing a pension benefit policy, the employer must address the following questions:

- Is retirement income going to be provided entirely by a defined benefit plan, entirely by a defined contribution plan, or by some combination of both?
- Are all periods of service included or does the pension ignore certain periods such as service before age 25, after age 65, after 30 years of service, etc?
- Is the employee's total compensation taken into account or are items such as overtime and bonuses excluded?
- Are benefits based on career earnings or average final pay?
- Does the employer pay the full cost of the retirement benefit or is the employee expected to set aside a part of current income in order to be eligible for part or all of the retirement plan's benefits?
- Is the plan "integrated with Social Security" or does it provide the same percentage of pay to all employees with equal service?
- Are pensions "indexed" for inflation during retirement?
- Is the pension calculation oriented toward providing substantial benefits upon early retirement or are "full" benefits only payable upon normal retirement?
- Would the amount of normal retirement benefit be considered modest, average or high for a long-service employee (30 or more years)? a medium-service employee (20 to 30 years)? a short-service employee (less than 20 years)?
- What ancillary benefits are provided?

The answers to these questions affect the size of the retirement income, its balance between short-service and long-service employees, between normal and early retirements, and between higher and lower paid employees.

Type of plan

Defined benefit plans should be the foundation of a sound retirement income policy. They are the only plans that can assure that the retiree receives the level of periodic income which the employer's retirement income policy attempts to provide. They are also the only plans that can relate the retirees' pension to their income in the years closest to retirement. Defined contribution plans can be a valuable supplement to defined benefit plans but cannot replace them. Furthermore, it is not clear that the retiring employee requires a capital accumulation plan to be available at retirement. Since the topic of defined benefit and defined contribution plans is being addressed by other speakers, I will not discuss it further here. The rest of the paper, except where noted, basically concerns defined benefit plans.

Service

Crediting all service from employment to termination is generally perceived as the most even-handed approach. Limiting service by not crediting service before or after a certain age, or limiting the total number of years included in the pension formula, will favor or penalize certain groups - short-service employees, long-service employees, employees who work after normal retirement age, employees who retire early, etc. For the long service employee it doesn't matter if the formula is 2% a year for a maximum of 25 years or

1-2/3% a year for 30 years. For the short and medium service employee it does make a difference in their retirement income.

Earnings Definition

If the ratio of the employees' pay for pension purposes to their total pay varies very little from employee to employee, the definition of pay for pension purposes does not have too much of an effect provided the formula is adjusted to produce the appropriate level of retirement income. The distinction is more important where variations among employees or from year to year exist.

The pension should, of course, replace earnings that are earned during the period. Unearned items, such as sick pay or vacation pay that are carried over from a previous period should not inflate the earnings base and the resulting retirement income.

Earnings Base

Retirement benefits based on final pay can be related very closely to income in the years immediately preceding retirement. Benefits based on career average earnings cannot be closely related to final earnings without frequent "updates" through plan amendments. However, career earnings plans are updated periodically in order to reestablish the desired level of retirement income for currently retiring employees. Final average earnings are usually computed over a period of three or five years. In some governmental plans, final one or two year periods are used. In private plans periods fewer than three years normally are not used; they can be deemed to be discriminatory by the Internal Revenue Service.

As just indicated, some employers with career average plans update accrued benefits from time to time to approximately track final average plans. While this technique can partly overcome the deficiency of this type of plan, it can also produce dichotomies between the pensions of someone who retires just before an update and someone who retires right after one.

Employee contributions

With the rapid increase in employee Social Security contributions (effectively 6.7% of salary up to $37,800 in 1984 and 7% of some higher amount in 1985), the number of retirement plans with mandatory retirement contributions is declining, a decline which has been occurring for at least two decades. The recent increase in the number of employers that provide both defined benefit and defined contribution plans (many of which have employee contributions) has accelerated the decline in contributory defined benefit plans.

Initially, defined benefit plans were mostly contributory, partly due to the view that the employee should share the responsibility for saving for retirement. The growth in retirement plan coverage after World War II, however, resulted in the establishment of many noncontributory plans and a decline in the popularity of contributory plans. With the increase in the availability of retirement savings plans (e.g., IRAs) and defined contribution plans, contributory defined benefit plans have continued to decline -- especially in private industry. The practice is still fairly widespread in state and local governmental plans. Now that new federal employees will, for the first time, be contributing to Social Security, the

question of the level of their contributions, if any, to their own retirement plan requires careful study and consideration.

Integration with Social Security

The integration of the retirement pension with Social Security is an issue not only in determining the benefit formula, but also in determining the level of contributions. One level for earnings subject to Social Security can be adopted while a second level (presumably higher) can apply to earnings above the FICA base. Many benefit professionals, however, believe that the most desirable approach from a benefit design viewpoint is to directly offset a percentage of the Social Security benefit against the pension. While more equitable than the "step-up" approach, the offset approach is more administratively complex.

Adjustment for Inflation

Inflation during the employees' working career can generally be managed by means of a pension based on average final pay. After retirement, adjustments for inflation can be made periodically on an ad hoc basis or automatically through an indexing formula. The ad hoc approach is common in private plans; the automatic indexing approach is common in public plans. Although most adjustments have been calculated based on the Consumer Price Index (CPI-U or CPI-W), it is questionable whether the CPI accurately reflects the effect of inflation on retirees. To date, no index for retirees has been developed.

Early Retirement

The level of early retirement benefits, as compared to the normal retirement benefit, can act as a strong force encouraging or discouraging early

retirement. If the early retirement benefit is the actuarial equivalent of the accrued normal retirement benefit, the formula does little to encourage early retirement. If the benefit is greater than the actuarial equivalent, especially when the early retirement benefit is equal to the full accrued pension, it can encourage employees to take early retirement. The age (or age and service combination) at which the full accrued benefit can first be paid has a significant effect on early retirement. It is the earliest age at which employees perceive that they are not being penalized if they retire early.

A pension benefit policy should recognize the concept of a "proper" retirement age such as 62, 65 or 70 and that most employees who "retire" at age 50 or 55 do not leave the work force but seek other full- or part-time employment. It costs at least twice as much to provide full retirement income starting at age 55 as starting at age 65.

Level of Benefit

The issue of the level of retirement income as compared to income just before retirement is twofold. First, the desirable level of normal retirement income must be defined. Second, it must be defined in terms of the long-service employee, the medium-service employee and the short-service employee.

Most corporate plans determine the "proper" retirement income level for the long-service employee and give pro rata benefits to shorter service employees. Through the use of front-loaded formulas, other plans give somewhat more than proportionate benefits to the short-service employee. The

present Civil Service plan gives less than a proportionate benefit through the use of a back-loaded formula.

Ancillary Benefits

In addition to providing retirement income, a sound retirement income policy will address the question of providing other benefits to meet the needs of the retiree. This can include disability income, death benefits after retirement, and medical insurance in conjunction with Medicare. These benefits can be provided as part of the retirement program. Death benefits, particularly joint and survivor benefits to beneficiaries of retirees, are almost always provided as part of the retirement plan. These benefits are often highly subsidized by the employer, as is done in the Civil Service System, but may be paid for entirely by retirees who elect the benefit through an actuarial reduction in their pension. Medical benefits and other forms of death benefits are generally provided as separate benefits.

Replacement Ratio and Benefit Ratio

The various issues discussed above are reflected in the retirement benefit formula. Together with the benefit accrual rate, they define the amount of retirement income. However, this definition is not sufficient to determine whether the retirement income objectives have been attached. For this, certain ratios are useful. They are the replacement ratio and the benefit ratio.

The benefit ratio may be defined as the ratio of the plan benefit to gross income in the year preceding retirement. It is most useful for comparing benefits under the pension plans of various employers to each other at

various salary or service levels. However, it is not too useful for determining whether retirement income objectives are met because it does not take Social Security and other retirement factors into account.

A better analysis is obtained through the use of replacement ratios, which may be defined as the ratio of the pension plus Social Security to the employee's spendable income immediately prior to retirement--all on an after tax basis. This concept is discussed more fully in the next section.

REPLACEMENT RATIOS

Traditionally retirement income objectives for total plan benefits plus primary Social Security benefits have ranged from 70% to 80% of pre-retirement salary for lower paid employees and from 50% to 70% of pre-retirement salary for higher paid employees. These benefit objectives would normally apply for an employee who spends the major part of his career (i.e., 30 years or more) with an employer. Lesser benefit objectives are appropriate for shorter service employees, particularly in view of the fact that retirement plans now have relatively liberal eligibility conditions for vesting. Thus, many employees who join an employer later in their careers will have vested benefits from their previous employer or employers.

Personal savings are not directly taken into account in determining benefit objectives since employees accumulate varying amounts of personal savings at retirement and a large percentage of personal savings in this country is represented by home purchases.

In any event, the generally accepted basic goal for a retirement program is to provide retirement income from all sources that allows the retired employee to maintain a standard of living that is reasonably consistent with his standard of living before retirement. In determining the amount of retirement income that this goal necessitates, it should be recognized that when employees retire:

- they no longer have work-related expenses such as clothing, commuting costs and meals away from home,
- they probably will be eligible for Medicare upon attaining age 65,
- tax exemptions increase upon attaining age 65 and a larger portion of their income is taxed at lower rates (at least 50% and in many cases 100% of the Social Security benefit is tax free)
- the cost of supporting children has probably ceased,
- mortgage payments have probably stopped, and
- life insurance premiums may have been reduced or eliminated.

The cessation of the latter three items, while significant, obviously does not coincide with retirement. If these costs exist immediately before retirement, in most cases (other than premium paid up at 65) they will continue for a time after retirement. On the other hand, if they have ceased before retirement, the employees will have adjusted their standard of living accordingly.

After retirement employees have three sources of income:

- their retirement benefit under the employer's retirement program,
- Social Security, and

- the income which can be earned on accumulated personal savings or through the liquidation of a portion of personal savings.

A useful measure of the adequacy of this income is the replacement ratio.

The term replacement ratio applies to the percentage that retirement income provided by a retirement plan and by Social Security is of an employee's income immediately prior to retirement on an after-tax spendable income basis.

Pre-retirement spendable income

Pre-retirement spendable income may be defined as gross earnings less the following:

- Federal and state income taxes
- Social Security tax
- Work-related expenses
- Life insurance costs
- Medical insurance costs.

Post-retirement spendable income

Post-retirement spendable income may be defined as the

- Pension from the employer's plan, plus
- Social Security benefits, less
- Federal and state income taxes, less
- Medicare premiums.

As an example -

Employee earns - $25,000

Company pension - $ 8,000

However - Income taxes on the pension might be $100 and as much as $2,500 on the $25,000 in wages. Since total retirement income is less than $25,000, there would be no income tax on the Social Security benefit.

Adding - Social Security Benefit - $ 8,000

Social Security Taxes - $ 1,675

Commuting Costs - $ 725

We get the following:

Take home pay	$25,000	(wages)
	-2,500	(taxes)
	-1,675	(Soc. Sec.)
	- 725	(commuting)
	$20,100	

Spendable Retirement Income	$ 8,000	(company pension)
	+8,000	(Soc. Sec.)
	- 100	(taxes)
	$15,900	

Replacement Ratio = $\frac{\$15,900}{\$20,100}$ = 79%

A pretty good plan!

In this example we have used only the primary Social Security benefit. If the retiree has a spouse, the Social Security pension will be 50% bigger, and the replacement ratio would be over 100%.

The question of whether to include the spouse's Social Security in the calculation is a philosophical one which has to be addressed in the employer's retirement policy. Certainly the spouse's Social Security benefit is part of the total retirement income of the couple. To ignore it is to understate the total retirement income of the couple.

On the other hand, employees receive the same pension from the employer whether they are single or married. If the spouse's Social Security benefit is taken into account, the pension plan that is adequate for married employees will be inadequate for single employees. The employer's retirement income objectives should try to balance the needs of single and married employees on this issue.

CONCLUSION

The goal of a retirement income policy is to meet the retirement income needs of the workforce at a cost level most affordable to the employer. There are many issues to be decided regarding service, compensation, age at retirement, integration with Social Security, etc. The calculation of the replacement ratio based on the retirement benefit as defined by the answers to the stated issues is the best measure of how well the employer's retirement income objectives have been met.

DEFINED BENEFIT PLANS*

Paper Presented by Dan M. McGill
before the Policy Forum
of the Senate Governmental Affairs Committee
December 13, 1983

Other participants in this educational forum are addressing the setting of retirement income objectives and the sources of income that may be available to meet those objectives. It is generally agreed that retirement income objectives for any group of employees should be set at a level sufficient to permit a retired person and spouse to enjoy a standard of living throughout retirement roughly equivalent to that which they enjoyed during the years immediately prior to retirement. Generally speaking, retirement income from all sources in the range of 50 to 75 percent of gross compensation at time of retirement, dependent upon the level of earnings, will enable a retired individual to enjoy a post-retirement standard of living reasonably comparable to his or her preretirement standard of living. The percentage of preretirement income needed declines as gross earnings increase, primarily because of tax effects.

It would appear that throughout the foreseeable future, the primary sources of retirement income for the bulk of the populace will be Social Security and employer-sponsored pension plans. In undertaking to meet some of its employees' old-age financial security needs, an employer has the broad choice of

*Portions of this paper have been adapted from materials that I prepared for Winklevoss and McGill, Public Pension Plans, published i

promising a set of retirement benefits, subject to specified conditions, or promising to set aside funds for the employees on a stipulated basis, with the intent that the balance in an employee's account at time of retirement be sufficient to provide the targeted level of income. The latter approach is described as a defined contribution plan and the former as a defined benefit plan. Defined contribution plans predominate in number but defined benefit plans account for the bulk of coverage and pension assets.

The remainder of this paper is concerned with the benefit design and funding of defined benefit plans.

A. Benefit Design

The core of a defined benefit plan is a benefit formula that over time and under a given set of circumstances determines the amount of benefits that a plan participant will receive at retirement. Broadly conceived, a benefit formula is composed of three elements: (1) a description of the basis for determining annual benefit accruals, (2) a statement of the conditions under which the benefits will be payable, and (3) a stipulation of the form in which the benefits will be payable. Stated differently, the benefit accrual for a given year of credited service must be defined in terms of the dollar amount of the annual benefit accrual, the age of the participant at which the aggregated benefits will become payable in full, and the annuity form in which the benefits will be paid unless an alternate form of payment is elected by the participant.

Amount of Benefits

All defined benefit plans explicitly or implicitly assign a unit of benefit to each year of recognized service with the employer. The unit of benefit may be expressed as a percentage of compensation, as defined -- the usual procedure under a plan for salaried employees -- or as a specific dollar amount, a type of formula associated with a collectively bargained plan for hourly employees.

Under an earnings-related formula, the unit of benefit credited for any particular year of employment may be based upon the participant's compensation for that year or upon the participant's average compensation during a specified period, such as three, five, or ten years prior to retirement. The first type of formula is called a career average formula, while the second is referred to as a final average formula. A common modification of the final average approach is to base the benefit on a specified period of consecutive years of highest average compensation, whether or not the period fell immediately before retirement.

The principal appeal of the final average formula is that it automatically provides benefits appropriately related to the participant's compensation during the years close to retirement. In other words, it protects the accruing benefits against loss of purchasing power because of inflation. This is a result normally desired by both the plan sponsor and the plan participant, but it creates uncertainty for the sponsor as to the

financial magnitude of its undertaking. The cost is reasonably predictable as a percentage of covered payroll, a more logical measure of cost than dollar outlay.

The dollar value of a career average benefit accrual is known at all times but its future purchasing power is not known nor predictable with any precision. In a period of steady and substantial inflation, the purchasing power of career average benefits can be seriously eroded. For example, if there was a constant 6 percent inflation rate during the entire period of service of a participant who entered the plan at age 25, the benefit produced at age 65 by a career average formula would have only 29 percent of the purchasing power of the benefit produced by a 5-year final average formula. For a 30-year participant, the career average benefit would still be only 43 percent of the final five benefit, assuming salaries reflect inflation in full. To counteract this erosion, the sponsor of a career average plan may amend the plan from time to time to restate the accrued benefits in terms of current compensation. If done frequently enough, this practice will protect accrued benefits reasonably well -- without an advance commitment from the sponsor -- but it can generate substantial unfunded liabilities.

As noted above, many collectively bargained plans express the benefit accrual as X dollars of monthly income per year of credited service. This is an acceptable approach in industries where the range of hourly wage rates is relatively narrow. The current monthly benefit in many industries is $15 or more for each

year of credited service. The benefit is generally renegotiated every three years and made retroactive to all prior years of credited service to preserve the purchasing power of the accrued benefits.

Most defined benefit plans grant benefit credit for some or all years of service prior to establishment of the plan. This is necessary in order to provide an adequate retirement benefit to those with many years of service and possibly even approaching retirement. Indeed, this is the genius of the defined benefit plan. It is a way to provide adequate pensions to all employees irrespective of their ages or years of service at inception of the plan. It results in an effective allocation of employer pension contributions that favors older and longer service employees. In the process, substantial supplemental liabilities are created, the amortization of which may extend over 30 years. This resource allocation capability of a defined benefit is not needed, it may be observed, for a group of newly hired employees.

In determining the benefit structure of a defined benefit plan, the plan sponsor (and collective bargaining representatives, if any) will usually take cognizance of the benefits available under Social Security. This recognition is described as integration of the plan with Social Security. If provision is made in the plan for a modification of the plan benefits to recognize Social Security benefits, the plan is said to be explicitly integrated. If the plan benefits are initially set at a lower level than they would be in the absence of Social Security, the

plan is said to be implicitly integrated. Implicit integration is feasible only for plans covering groups with relatively flat wage rates. Integration is carried out in recognition of the fact that Social Security benefits favor lower income workers and operate to reduce the need for plan benefits, as a percentage of compensation. Full integration is a significant source of cost-saving for the plan sponsor.

Retirement Age

The age at which a participant is permitted to retire with full, unreduced benefits is an essential component of the benefit formulation and is a prime determinant of the cost of the plan. This is identified as the normal retirement age. Most plans permit participants to retire over a range of ages, such as from age 55 to 70, usually with some adjustments to the normal retirement benefit. Thus, there may be early, normal, and deferred retirement.

Normal Retirement Age. At one time a simple notion, normal retirement age has become an elusive concept in many pension plans. In its most elemental form, the normal retirement age is the earliest age at which eligible participants are permitted to retire with full benefits. A more precise definition is provided in Section 2.08 of Revenue Ruling 71-446: "Normal retirement age is the lowest age specified in a plan at which the employee has the right to retire without the consent of the employer and receive retirement benefits based on service to date of retirement at the full rate for such service set forth

in the plan" (i.e., without actuarial or similar reduction because of retirement before some later specified date).

In the private sector, the most common single age specified as the normal retirement age is 65. Under ERISA, the normal retirement age cannot be higher than 65 or, if later, the age at which the employee completes ten years of service. It is customary to require a minimum of five or ten years of credited service for entitlement to benefits at normal retirement age. Because of a general desire on the part of employees to enter on their pensions at ever younger ages, pressure from younger employees to remove older workers from the labor force, and the desire of management to ease employees who have lost their effectiveness from the payroll, the simple concept of a single, designated normal retirement age has been supplanted in many plans and many sectors of the economy by provisions that permit employees under defined circumstances to qualify for full accrued benefits at ages lower than that specified as the normal retirement age. For example, full unreduced benefits for service accrued to date may be made available at age 60 with 20 years of service or at age 55 with 30 years of service. Under these arrangements, it would have to be concluded that there are multiple normal retirement ages, depending upon the related service required and the employee's age of entry into the plan.

In practice the choice of the normal retirement age must be made in the light of cost, personnel policy, and public welfare considerations. In terms of pension costs the normal retirement age is one of the most critical features of plan design.

As the plan's normal retirement age is decreased, there is an associated increase not only in the proportion of employees who will survive in active service to reach retirement but also in the average number of years over which each pensioner will receive benefits. The effect of these changes on plan costs is indicated in Table 1. The table shows the multiple of the level annual percentage of salary needed to fund members' retirement at age 65 that would be required to fund retirement at various other ages. For a member entering the plan at age 35, the annual percentage of the employee's salary required to fund retirement age age 55 is more than twice that required to fund retirement at age 65. This is true even though the member will have accumulated fewer benefit accruals at the earlier age. Table 1 also shows that the relative cost of retiring employees at different ages is not overly sensitive to the entry ages of the employees.

Table 1
Sensitivity of the Cost of Retirement Benefits to the Normal Retirement Age

Normal Retirement Age	Level annual percentage of salary required to fund retirement benefits commencing at various ages, as a multiple of the age 65 value.*		
	Entry Age 25	35	45
50	2.8	2.6	2.5
55	2.2	2.1	2.0
60	1.6	1.5	1.5
62	1.3	1.3	1.3
65	1.0	1.0	1.0
70	0.5	0.5	0.6

* Values based on the implicitly integrated prototype plan.

Another way to view the cost impact of the normal retirement age is to compute benefit accrual equivalencies among various retirement ages. This has been done in Table 2. For the purpose of constructing the second column of the table, it is assumed that a plan initially provides for an annual benefit accrual of 1.5 percent of final three-year average salary payable at age 65 in the form of a single life annuity. The column shows the benefit accruals that would generate an equal cost to the employer if the benefit were to commence at any age from 64 down to 50. The third column shows the benefit accrual for normal retirement age age 65 which would cost the employer the same amount as an accrual rate of 1.5 percent of final three-year average salary if the benefit were to commence at the earlier ages shown.

Table 2
Comparative Benefit Accrual Rates for Various Male Normal Retirement Ages*

Normal Retirement Age	Accrual rates up to various normal retirement ages that generate the same costs as an accrual rate of 1.5 percent up to age 65	Accrual rates up to age 65 that generate the same costs as an accrual rate of 1.5 percent up to various other normal retirement ages
65	1.50%	1.50%
64	1.46	1.54
63	1.42	1.58
62	1.39	1.62
61	1.36	1.66
60	1.32	1.70
59	1.30	1.74
58	1.27	1.77
57	1.25	1.81
56	1.22	1.84
55	1.20	1.87
54	1.18	1.90
53	1.16	1.93
52	1.15	1.96
51	1.13	1.99
50	1.12	2.02

* Values based on 1971 Group Annuity Table with 7 percent interest.

The table indicates that a benefit of 1.5 percent per year of service payable from age 65 costs the same amount as an accrual of 1.32 percent payable at age 60 and 1.20 percent payable at 55. Conversely, a benefit of 1.5 percent per year of service payable from age 55 costs as much as an accrual of 1.87 percent payable from age 65. A benefit of 1.5 percent payable at age 60 would be equivalent to an accrual of 1.70 percent payable from 65. Thus, it may be observed that benefit accrual rates that seem perfectly defensible when payable at a particular retirement age are seen to be excessive from a cost standpoint when viewed in the context of a normal retirement age that has tended to become the norm for plans in the private sector -- and may have to become the norm for public plans.

With respect to the pension plan's function as an instrument of personnel policy, the normal retirement age is a statement of the employer's desires concerning the timing of employee retirement. If the employer wants employees to retire at relatively young ages, then this should be encouraged by incorporating a low normal retirement age in the pension plan or by providing very generous retirement privileges prior to normal retirement. If the employer wants the employees to remain on the job as long as they are effective, then the normal retirement age should be pushed back and attractive deferred retirement provisions should be provided. The normal retirement age need not be viewed as the mandatory retirement age.

The normal retirement age should not be set in the absence

of economic and societal considerations. From a purely economic standpoint employees in both the public and private sectors should continue in active employment as long as their mental and physical powers permit. Society as a whole would benefit from the increased flow of economic goods and services from prolonged employment, and the physical and psychological well-being of many individuals would be enhanced by a continuation of meaningful economic activity. Of course, if the economy is not expected to generate enough jobs to provide employment for all present and future members of the labor force, a lower retirement age might be needed to remove the older workers from the labor force and permit their places to be taken by persons just entering the labor market. It could also be argued that society might prefer more leisure time to pursue recreational, cultural, and other noneconomic interests, even if it means a lowering of their financial standard of living. In other words, society might logically sanction an institutional arrangement under which members of the labor force would be afforded the opportunity to spend many years in full-time noneconomic pursuits at the end of a moderately long service career. Such a societal judgment would obviously involve a balancing of economic and noneconomic considerations.

Unfortunately, there is no body of economic, political, or social theory that points unequivocally to the optimum normal retirement age from a societal standpoint. Most business firms chose age 65 because of the precedent set by the Social Security

Act in 1935. Today, life expectancy is much longer, general health is improved through medical advances, and technology has reduced the physical demands of most jobs. These factors alone argue for a higher retirement age than that which has been institutionalized in this country.

An even stronger argument for a later retirement age is found in the changing demography of this country. The drastic decline in fertility rates that has occurred over the last decade and seems likely to be sustained throughout the immediate future will ultimately produce a situation in which a shrinking labor force must support an expanding retired population. It has been predicted that if the fertility rates remain at their present level until the year 2010, when the individuals born in the "baby boom" of the late 1940s begin to reach retirement, there will be one Social Security beneficiary (including children and other secondary benefit recipients as well as retired persons) for every two persons in the active labor force. This would put a tremendous strain on the available goods and services unless an unprecedented increase in productivity were to occur in the meantime. While these economic and demographic forces do not argue for an immediate raising of the normal retirement age in all existing pension plans, they do argue for a halt to the trend toward ever lower retirement ages and a move towards higher retirement ages.

Early Retirement. In order to further utilize the pension plan as an instrument of personnel policy, an employer may choose to permit employees to retire with reduced benefits at ages prior to the normal retirement age. A plan permitting normal retirement at age 60, for example, might provide for retirement with reduced benefits at age 55 if the employee has accumulated ten years of creditable service.

The early retirement benefit is generally calculated as a percentage of the accrued portion of the benefit that would have been paid at the normal retirement date. Some plans provide for a stipulated percentage discount for each month by which actual retirement precedes the normal retirement date. Typical discounts are one half of one percent per month (6 percent per year) or 1/180 per month (6 2/3 percent per year). On the other hand the discount factors may depend on the interest and mortality assumptions that the actuary uses to value the plan costs and liabilities, in which case the reduction is said to be actuarial.

An arbitrary scale of reduction factors, particularly the one half of one percent reduction per month, is easier to explain to participants than the full actuarial reduction. It is frequently designed to encourage early retirement, being coordinated with the overall personnel policy of the employer. The general practice of using early retirement factors more favorable to the employee than the full actuarial reduction is referred to as subsidized early retirement.

The cost to the employer of an early retirement program is not easily ascertainable since it depends on several factors which have offsetting characteristics. Moreover, some of these factors are dependent on the age and sex mix of the plan and the other provisions of the plan. In the first place there is the age at which benefits commence. The cost of a specified monthly income beginning at age 65 is significantly less than the cost of the same benefit payable from age 60. On the other hand an employee who retires early gives up future creditable service as well as future salary increases; therefore, the employee's full benefit (i.e., before reduction on account of early retirement) will be appreciably less than if taken at the normal retirement date. Then there is the consideration of the precise reduction factors that are applied to the accrued benefits and the amount of retirement income subsidy which the employer is willing to support. Also there is the question of possible benefit increases based on cost-of-living indices that may enhance the value of the earlier income stream. There is one final factor, the impact of which cannot be ascertained from the pension plan balance sheet. If employees are encouraged to retire at earlier ages, there is an associated cost of payroll for new entrants to the plan. While it is true that the employer saves the cost of the payroll for the persons who retired, it may be that younger employees must be promoted at a faster rate, thereby minimizing and possibly negating potential payroll savings.

Deferred Retirement. Participants in a pension plan may want to continue in service beyond the normal retirement age in order to earn additional benefit credits, to enlarge the salary base to which the benefit formula will apply, to spread the liquidation of the accumulated assets of a money purchase plan over a shorter period of years (and thus increase the amount of the periodic payments), or to enjoy the continuation of their salary. There may also be nonfinancial reasons for wanting to continue on the job.

Prior to the 1978 Amendments to the Age Discrimination in Employment Act, corporate pension plans generally stipulated that a participant could continue in service beyond normal retirement date only with the consent of the employer and then only to the mandatory retirement age, which might be age 68 or 70. Practice varied as to whether an individual permitted to continue in employment would receive benefit credits for the additional years of service and would have the benefit base adjusted for salary increases. The retirement systems of public bodies tended to permit participants to remain in service beyond the normal retirement age without the employer's consent, up to a specified mandatory retirement age, such as 70. Benefits for the additional years of service accrued in the normal manner, and salary increases were recognized for benefit compensation purposes.

The 1978 Amendments to the Age Discrimination in Employment Act (ADEA) made it unlawful for an employee benefit plan or

seniority system of a private sector employer or a state or local government entity to require or permit the involuntary retirement of an employee prior to age 70. The law does not require the plan sponsor to credit benefits for service beyond normal retirement age, to recognize salary increases for benefit computation purposes, or to make contributions under a defined benefit or defined contribution plan on behalf of employees who continue in service beyond normal retirement age. Nor does the Act require an actuarial adjustment in the employee's benefits to reflect his actual age at retirement.

There is a wide range of opinion as to what benefit an employee who delays retirement beyond normal retirement age should receive upon actual retirement, and practices currently reflect this diversity of opinion. At one extreme is the view that the employee should receive precisely the same dollar benefit that the employee would have been entitled to had he retired on the normal date. The basic argument in favor of this position is that the plan promised a benefit payable from a specified date, which the employee could have received by retiring on that date without the consent of the employer. By continuing to work, the employee enjoyed the economic benefits of a full salary, which would typically be much larger than a pension. Having enjoyed that advantage with the approval of the employer, the employee has no right to claim a higher pension upon eventual retirement. Under this approach, delayed retirement reduces the employer's cost by the benefits that

would have been paid had the participant retired at the normal retirement age, and the employer incurs no cost for pension accruals in respect of the participant after the normal retirement age. This practice is permissible under ERISA and the amended ADEA.

At the other extreme is the view that the employee should upon actual retirement receive benefits that are the actuarial equivalent of those that would have been payable at the normal retirement date, adjusted for any increase in the salary base and augmented by additional benefit credits at the regular rate. This approach offers a strong inducement for employees to continue in service beyond the normal retirement date.

Between these extremes a number of intermediate positions may be found. Table 3 displays the impact of several of these intermediate deferred retirement policies on the amount of monthly benefit receivable at ages after the normal retirement age (i.e., age 65). The first column of the table shows the impact of allowing the deferred benefit to be based on the updated final average salary of the retiring employee. The increase in the retirement benefit is seen to be 5 percent per year, which is the assumed rate of increase in salaries at the older ages. The next column indicates the impact of adjusting the retiring employee's benefits for only the benefit accruals earned subsequent to the normal retirement date. Since it is assumed that the retiring employee entered the plan at age 30, by retiring at age 68, for example, he would have accrued 38

Table 3
Effect of Deferred Retirement Provisions on Retirement Income Receivable

Deferred Retirement Age	Retirement benefit payable as a percentage of benefit payable at age 65*			
	Update Final Average Salary Only	Allow Additional Accrued Benefits Only	Provide Actuarial Equivalence Only	Adjust for Salary, Service, and Equivalence
65	100%	100%	100%	100%
66	105	103	114	123
67	110	106	129	151
68	116	109	148	186
69	122	111	169	229
70	128	114	195	285

* Table is based on implicitly integrated prototype plan.
Assumptions: Age 30 entrant.
Salaries increase at 5 percent per year plus merit.
Benefit is straight life annuity increasing by 4 percent per annum.

instead of 35 years of service, but this additional accrual would be applied to the final average salary as of the normal retirement date. The third column exhibits the effect of providing the actuarial equivalent of a benefit which could have been received at age 65. Under this policy, the cost to the employer is independent of the retirement age. The benefit amount is increased primarily because of the shortened payout period but is also dependent on the interest and mortality assumptions used by the actuary to value the plan liabilities. Note that the benefit amount is not affected by an increase in the final average salary, nor by additional earned creditable service of the employee. The table shows that this deferred retirement policy provides a strong inducement to the employee to remain in employment after the normal retirement date.

Finally, the last column reveals the impact on retirement benefits of an extreme deferred retirement policy providing credit to the employee for additional service, an increased salary base, and the reduced payout period. The impact is so great that the proportion of preretirement earnings provided in deferred retirement would probably be substantially in excess of any logical targets. In any event the employer's attitude toward the delayed retirement provision may be influenced not only by philosophical and actuarial considerations, but also by personnel policy; that is, whether the employer wants to encourage or discourage the employees to continue in employment beyond the normal retirement date.

Normal Annuity Form. As noted earlier, the benefits under a pension plan are established and their associated costs calculated on the premise that the benefit payments will conform to a particular pattern. This pattern is known as the normal annuity form, even though the plan may be funded through a trust and the benefits paid directly from the trust fund rather than in the form of insurance company annuities. The normal annuity form specified in most noncontributory plans is the straight life annuity, which provides monthly payments to a single, designated individual (the employee in a pension plan), for as long as the employee lives, with no payments to the estate of the deceased or any other person. Contributory plans usually adopt a modified cash refund annuity. This form

promises that should the employee die before receiving retirement benefits equal to the accumulated value at retirement of contributions, the difference between the benefits paid and the accumulated contributions will be refunded in a lump sum to the estate or to a designated beneficiary. Some contributory plans prescribe a life annuity with payments guaranteed for five or ten years, either form of which will generally ensure the return of the employee's accumulated contributions.

Pension plans have traditionally given the participant the option of electing, either before or at retirement and at his own expense, an annuity form different from that prescribed in the plan document. The range of options has differed, some plans offering a wide choice and others being rather restrictive, but it has been customary to offer some form of joint and survivor annuity in order that the participant might assure his spouse of a life income in some amount. One type of joint and survivor annuity provides for an initial benefit amount to be paid while the pensioner and spouse are both living and an ultimate amount (usually less than the initial amount) to be paid after either recipient dies. A second type of annuity provides that the initial amount will be paid as long as the plan member is living and that the ultimate amount will be paid only if the spouse of the member is the only living recipient. This form is called a joint and <u>contingent</u> survivor annuity.

In response to increasing concern over the general failure of plan participants to elect voluntarily a joint and survivor annuity for the protection of their spouses, Congress ordained through ERISA that all qualified pension plans must provide that retirement benefits payable to an employee married to a current spouse for at least one year will be automatically paid in the form of a qualified joint and survivor annuity form unless the participant elects otherwise. A qualified form is a joint and survivor contingent annuity that provides income to the surviving spouse in an amount equal to at least one half of the income payable during the time that the employee and spouse are both alive.

In the absence of a provision to the contrary, the spouse would lose her interest in the joint and survivor annuity if the participant were to die before retirement. This is considered to be a particularly inequitable consequence if the participant dies after becoming eligible for early retirement but before entering on the joint and survivor annuity. ERISA now requires that a participant be permitted to make an election that would have the effect of providing joint and survivor annuity benefits to the spouse if the participant dies after eligibility for early retirement (within ten years of normal retirement) but before actual retirement. Legislation currently before Congress would extend this protection to all vested benefits and provide a surviving spouse with one-half of the participant's vested benefits if he should die before retirement.

The financial significance of providing normal annuity forms other than a straight life annuity can be appreciated by reference to Table 4. For various ages at retirement, the table displays the cost of the alternative forms as a percentage of the cost of the straight life annuity. The least costly alternative annuity form is seen to be the five-year certain annuity which guarantees payment for five years. This is because about 90 percent of the annuitants who retire at age 65 will survive the five-year period, thereby rendering the guarantee of little value. The additional cost of the ten-year certain annuity, on the other hand, is seen to be sensitive to the retirement age. It is not unlikely that the guarantee will serve to extend the payment period for the older retirees. The cost of the modified cash refund annuity is based on the assumption that employee contributions of 5 percent of salary have been paid from age 30 and have been credited with 7 percent interest per annum. Under these assumptions the accumulated contributions are fully paid out after a period of

Table 4
Cost of Various Annuity Forms as a Percentage of the Cost of a Staright Life Annuity*

Annuity Form	Retirement Age				
	55	60	62	65	70
Straight Life	100%	100%	100%	100%	100%
Five-Year Certain	101	101	101	102	104
Ten-Year Certain	102	104	106	108	116
Modified Cash Refund	101	102	102	103	108
Joint and One-Half Survivor	112	114	115	117	119
Joint and One-Half Contingent Survivor	116	119	121	123	127
Joint and Full Survivor	133	139	142	146	153

*Assumptions: Employee contributions made from age 30 at 5 percent of salary, credited with 7 percent interest per annum.
Pensioner is male with spouse 3 years younger.
Annual payment increases by 4 percent per annum.

between five and ten years, so that the cost of this form lies between the costs of the 5-year and 10-year certain annuities.

The additional costs of three types of joint and survivor annuity forms are displayed in the table. As should be expected, the cost of reducing the benefit to one half the initial amount when either recipient dies (joint and one-half survivor) is less than the cost of reducing the benefit amount only when the spouse of the plan member dies (joint and one-half contingent survivor). The most costly of the annuity forms shown in Table 4 is the joint and full survivor which provides for the initial benefit amount to be continued as long as either spouse is living.

A perennial issue in plan design is whether a participant upon reaching retirement should be permitted to take the actuarial value of retirement benefit in the form of a lump sum rather than in monthly payments spread over remaining lifetime.

Justification for the cash option is generally couched in terms of flexibility of financial planning. It is argued that some employees have a more urgent need for a lump sum rather than for a life income. They may need the money for medical treatment or to buy a retirement home. Some may want to invest in a business of their own. Others may feel that they can invest their share of the plan assets more profitably than the investment manager or in a way that will provide more protection against inflation. In some cases, the pension benefit may be too small to justify installment payments, while in others

it may be so large that the participant should be permitted to draw down some of it in a lump sum. Under some plans, the cash option may have been the only way that an employee in poor health could preserve his pension for the protection of a spouse or other dependents. In the final analysis the employer must decide whether the pension plan is to be regarded as a general savings program with all the flexibility that one would want in such a program or as an instrument of business and social policy designed to ensure a dependable source of income throughout the remaining lifetime of retired workers.

The cash option and all annuity options involve the concept of actuarial equivalence. That is, any optional form of benefit payment must have the same actuarial value as the normal retirement benefit and any other optional benefit. Inasmuch as the concept of actuarial equivalence can be rather imprecise or "flexible" in application, the Internal Revenue Service has decreed that beginning January 1, 1984 all plans must either specify the specific adjustment factors that will be applied in optional benefit settlements or the actuarial assumptions (mainly mortality and interest) that will be used. This is in implementation of the requirement that benefits be "definitely determinable." The ruling was primarily designed to prevent abuses in the use of "market" rates of interest in calculating the cash out or lump sum value of accrued benefits.

The IRS ruling does not bar the use of current interest rates but if they are to be used, they must be determined in accordance with an objective standard articulated in the plan.

Cost-of-Living Adjustments

If one subscribes to the notion that at point of retirement an individual should have a flow of income sufficient to sustain his or her preretirement standard of living, it is difficult to argue against the logic of protecting the purchasing power of that income during the individual's retirement years. The erosive impact of inflation on the purchasing power of any flow of income is all too familiar to this generation but Table 5 provides perspective in terms of pension benefits.

Table 5
Purchasing Power of Benefits under Selected Rates of Inflation and after Selected Time Periods as a Percentage of Purchasing Power in a Noninflationary Environment

Time Period	Inflation Rate (percent)				
	0	2	4	6	8
5 years	100%	91%	82%	75%	68%
10 years	100	82	68	56	46
15 years	100	74	56	42	32
20 years	100	67	46	31	21
25 years	100	61	38	23	15
30 years	100	55	31	17	10

The table shows, for example, that with a steady 6 percent rate of inflation, a stream of pension income will lose a fourth of its purchasing power within five years and almost half by the end of ten years. Within fifteen years after retirement -- the approximate life expectancy of a male aged sixty-five -- the purchasing power of an individual's pension benefits will be only 42 percent of its initial value. Naturally, the erosion of purchasing power is less with lower levels of inflation.

The same type of erosion occurs with respect to the vested benefits of terminated participants, since typically the deferred benefits of such persons are frozen at their preterm-ination level. The loss of purchasing power is a function of the elapsed time between termination and retirement and the rate of inflation. This may be seen in Table 6.

Table 6
Loss of Income Attributable to Nonindexed Vested Deferred Benefits

Number of Vested Annual Benefit Accruals Earned		Initial Monthly Income Received as a Percentage of Income Available from Sole Pension Plan*
First Plan	Second Plan	
0	35	100%
5	30	88
10	25	78
15	20	70
20	15	68
25	10	70
30	5	81

* Employee is assumed to enter second plan immediately upon withdrawal from first plan. Salary is assumed to increase by 5 percent plus merit per year. Both plans are assumed to have identical benefit structures, including full vesting of accruals after five years of creditable service.

This table assumes that a particular individual earns benefit credits in two successive pension plans having identical benefit structures, the benefits in the earlier plan being vested. If an individual accumulated ten years of pension credits in the first plan and twenty-five in the second, the combined benefits of the two plans at retirement will amount to only 78 percent of the benefits payable if all the service had been in the same plan, assuming that salaries increase by 5 percent plus merit each year. If the person had had twenty years of service in the first plan and fifteen in the successor plan, the combined benefit would be only 68 percent of the amount that would have been paid if all service had been in one plan.

Employers are not psychologically attuned to indexing or adjusting the benefits of individuals who have left their employ, presumably in search of greater economic opportunities. Nevertheless, it is interesting to note that on the basis of typical experience and 5 percent sustained inflation, the vested benefits of a plan could be fully indexed at an additional plan cost of 10.8 percent.

It is expensive to index or otherwise adjust the benefits of retired persons to protect their purchasing power. At a 5 percent level of inflation, full indexing of benefits of retired persons would increase the level percentage of payroll cost of a plan by about 54 percent. Annual adjustments of 10 percent would more than double the long-run cost of the plan.

Decisions concerning indexing depend importantly on judgments about the allocation of economic resources between the working and non-working elements of the adult population. This issue has both economic and ethical implications, not to mention the political. If indexing is to be undertaken, a choice must be made as between wage and price indexing, as well as among the various indexes that are available or could be constructed.

B. Funding

If a pension plan promises a set of determinable benefits -- as a defined benefit plan does -- the sponsor assumes responsibility for accumulating enough plan assets to pay the promised benefits. The cost of a set of benefits can be determined only in retrospect, so the funding policy of the plan sponsor must be based on the best estimates of future costs that can be provided through actuarial assumptions and techniques.

The plan participants may be asked to bear a portion of the plan costs through mandatory contributions, especially in the public sector, but the sponsor -- i.e., the business enterprise or employing agency -- has the ultimate responsibility of assuring asset adequacy. Consequently, the plan sponsor usually sets the investment policy of the plan and is credited with any investment earnings in excess of those assumed to be earned in the actuarial cost projections. By the same token, the sponsor must make up any deficiency in investment earnings as compared to projections. It is relevant to note that if a

fully funded plan consistently earns a 6 percent rate of return, approximately 70 percent of plan costs will be met out of investment earnings. Stated differently, 70 percent of the benefits will be paid out of investment income rather than plan contributions.

Plans subject to ERISA must set aside enough money to fund the normal cost of the plan currently and to amortize the supplemental liability, sometimes referred to as the "unfunded actuarial liability," over a maximum period of thirty years. Actuarial losses must be funded over a maximum of fifteen years. Thus far, plans in the public sector are not subject to any mandatory funding standards.

Designed to assure the actuarial soundness of the pension undertaking, these statutory funding standards and their legal underpinnings constitute the principal objection to a defined benefit plan from the standpoint of existing and potential plan sponsors. Under existing law, if a single employer defined benefit pension plan terminates and the plan assets are insufficient to discharge all benefit obligations under Title IV of ERISA, the plan sponsor may be required to contribute additional sums to the plan, or to the Pension Benefit Guaranty Corporation, up to 30 percent of its net worth as computed by the PBGC. Under proposed legislation, the 30 percent of net worth limitation would be removed and the plan sponsor would have to continue contributing to the plan until all vested benefits are fully funded. Employer participants in multi-employer pension plans have similar obligations. A signatory

firm that withdraws from a multiemployer plan must assume and ultimately fund its attributable share of the unfunded vested liabilities of the plan.

The Financial Accounting Standards Board (FASB) is considering an accounting principle, called a Statement, that would not only prescribe a new basis for computing annual pension cost accruals but would require that unfunded pension liabilities be shown on the plan sponsor's balance sheet. There would be an offsetting intangible asset to avoid an initial impact on net worth, but the intangible asset would have to be written off over a relatively short period of years. These proposals, which are likely to be adopted in some form, are based upon the assumption that a defined benefit plan will continue to function throughout the indefinite future and that all benefits accrued as of any given time will eventually have to be paid. There is a supporting assumption that the plan sponsor has a legal obligation to pay all promised benefits, the obligation running to the participants rather than to the plan. The FASB proposes that these new accounting requirements apply to pension plans of state and local government agencies.

These disadvantages of a defined benefit plan from the sponsor's vantage point must, of course, be weighed against the advantages of the arrangement that have nurtured and sustained it over the years.

Characteristics of Defined Contribution Pension Plans

by
Steven N. Weisbart, Ph.D.
Senior Research Officer
Teachers Insurance and Annuity Association
College Retirement Equities Fund

All pension arrangements -- defined contribution and defined benefit alike -- have as their fundamental purpose the systematic accumulation, during a participant's working years, of sufficient funds for retirement income to assure that the transition from work to retirement will be feasible and orderly, not only for the employee, but for the workforce and the workplace as well. The essence of the defined contribution type of pension plan is that each plan participant has an individual account, and the amount accumulated in that account when the participant retires depends on the amount of contributions made to the plan on the participant's behalf plus investment earnings these contributions produce. Rules for determining contribution amounts for plan participants are defined in the plan document.

Defined contribution pension plans are sometimes confused with thrift or profit-sharing plans. Both the conceptual and the operational differences between a defined contribution pension plan and a thrift plan for personal savings are significant, but not always obvious. Thrift plans have little or no influence on an employer's retirement or personnel policies. By contrast, pension plans do affect employers' personnel policies -- staffing, turnover, career paths, retirement ages, and of course, actually retiring. A pension

plan is a shared concern, with both employers as well as employees having a stake in the provisions and end results of the plan.

We'll concern ourselves in this paper solely with defined contribution pension plans. We specifically exclude profit-sharing, thrift, tax-deferred annuity, and similar plans -- not because of their unimportance but because they don't have the specific objective or function (orderly and feasible retirement) that pension plans do. And for the most part, my comments about defined contribution pension plans will be drawn from the experience of the TIAA-CREF system, a defined contribution pension system that has worked very successfully for higher education for 65 years.

Statement of the Employer's Commitment

In most defined contribution plans, the employer promises to contribute a stated percentage of each participant's pay per month (or similar period of service) into individual accounts under the plan. As each contribution is made, the employer's obligation with respect to accruals for the period of service is satisfied. Thus, the plan is always fully funded. No additional employer payments are required to make up for funding deficits caused by investment performance that falls short of what the plan's actuary assumed. Instead, in a defined contribution pension plan, the participants take the investment risk; if investment results are less than had been hoped, for example, the pension income is also. Of course, the opposite is also true -- where

investment results are greater than had been expected, the participant's income is also greater.

The amount contributed under the plan is usually a percentage of salary. A common starting point is to set the contribution percentage so that the plan produces a retirement income for the career employee that, when combined with Social Security, achieves a desired replacement ratio (pre-tax retirement income as a percent of pre-tax preretirement earnings). Commonly, for example, the plan objective is a replacement ratio of about 70%, with about half coming from Social Security and half from the pension plan. If we assume that wage increases and the pension plan's investment earnings each year match the rate of inflation, then for a 40-year career (say, from age 25 to 65), a contribution rate of about 14% of pay would fit the plan's income objective.*

The contribution rate can be split between the employer and the employee -- perhaps 10% employer and 4% employee, or 7% each for employer and employee -- or all can be made by the employer. The rate can be the same percentage for all employees, or it can differ, perhaps, by years of service. However, since the Supreme Court's Manhart decision in 1978, contributions may not differ by sex of the employee,

---

*This assumes that the accumulation is converted to income at the participant's age 65, that pay-out is in the form of a single life annuity, that the assumed investment return (AIR) included in the annuity factor is 4%, that the annuity mortality table used is TIAA's Merged-Gender Mod I, with ages set back one year, which produces annuity rates about halfway between the male and female rates of the 1971 IAM Table (1, 2.5), and that an expense charge of 1/4 of 1% of assets is deducted from investment earnings each year.

and since the Norris decision this summer, benefits derived from contributions made on and after August 1, 1983 also may not differ by sex of the recipient.

The defined contribution approach to pensions imposes a valuable funding discipline on the employer-sponsor. Unlike the situation with a defined benefit plan, any failure to make full and timely contributions to a defined contribution plan directly affects plan participants and is readily apparent to them. In addition, the defined contribution approach also imposes what I'll call a cost-benefit discipline. By this I mean that defined contribution plans avoid the problem that defined benefit plans sometimes fall into, by which benefit increases are promised without concommitant funding increases. Defined contribution plans don't create for one generation of participants benefits whose funding is deferred to another generation of participants.

Integration with Social Security

Since the overall objective of the pension plan includes benefits to be received from Social Security, it is logical that the contribution rate of a defined contribution plan be designed to coordinate the plan's benefits with Social Security benefits. As Dr. McGill has written,

> To design plan benefits in recognition of Social Security benefits is known as integration. If only the general level of the PIA is anticipated, the benefits are

said to be implicitly integrated. If both the level and shape of Social Security replacement ratios are taken into consideration, then integration of the benefit formula is said to be explicit.*

Many defined contribution plans have a level, or flat, contribution rate -- an implicitly integrated design. For explicit integration, a two-tier, or step, contribution rate is often used to bring persons of high, low, and middle salary levels to retirement with combined Social Security and pension benefits that represent a more uniform percentage, or replacement ratio, of their final salaries than can be achieved with a level contribution plan. In recognition of the Social Security benefit formula's weighting toward lower-career-earnings workers, a step-rate design calls for pension contributions set at one rate on the portion of a person's salary up to a dollar limit, and at a higher rate for salary over that limit. Among typical defined contribution pension plans with step-rate provisions, the rate on the lower part of salary is between 10% and 12.5%, and the rate on the rest of salary is between 15% and 18%. The step-rate pattern has been used primarily by employers having a range of salary levels extending well beyond the Social Security wage base.

Previously the most commonly-used amount above which the higher contribution rate applied was the Social Security wage base. But the wage base has moved up so fast in recent years that if step-rate plans had not changed, the higher contribution rate would have applied to but few participants and but little of their salaries, making

*Howard E. Winklevoss and Dan McCill, Public Pension Plans: Standards of Design, Funding, and Reporting, (Homewood, IL: Dow-Jones Irwin, 1979), p. 57.

step-rate plans, in effect, level rate plans. Instead, many plans now use the current "second formula bracket point" in the Social Security PIA formula, which increases each year as the Social Security brackets change. For 1984 the second bracket point translates as an annual salary of $19,344, above which the higher step contribution rate is applied. Therefore, a plan using the bracket point approach may call for a 10% contribution on salary up to $19,344 and 15% on the excess.

Defined Contribution Pension
Plans and Inflation

Earlier, in connection with the discussion of setting the plan's overall contribution rate, I assumed that employees' wage increases and the pension plan's investment earnings each year exactly match the rate of inflation. At this point I'd like to discuss the implications of this assumption, and then tackle the matter of the behavior of defined contribution pension plans in an inflationery environment.

First, consider the assumption that the plan's investment earnings match inflation. From the multi-decade historical studies of Ibbotson and Sinquefield, we know that U.S. Treasury Bill yields have shown this characteristic, with but small deviations from the CPI year by year. So the assumption is a realistic -- and maybe even a conservative -- one. To it, let's couple the assumption that an individual's wages keep even with inflation. This, too, is probably a conservative assumption, since even when the general level of wages loses ground to the price

level, merit increases and promotions for individuals moderate that effect over a working lifetime.

The following table shows the effect of these two assumptions on the contributions in selected years on behalf of an individual covered by a defined contribution pension plan. The table assumes a roughly 7% annual inflation rate, but the rate itself doesn't matter; the relationships shown hold for any interest rate.

(1) Year	(2) Age	(3) Nominal Salary	(4) Contribution Rate	(5) Contribution Amount	(6) Accumulated Value at 65
1	25	$20,000	14%	$2,800	$42,000
20	45	$80,000	14%	11,200	42,000
40	65	$300,000	14%	42,000	42,000

The key column, for our purposes, is column (6). It shows that, looking backward from the point of retirement, each year's contribution was "worth" as much toward the retirement income generated as every other year's contribution, and -- what is perhaps more important -- that they are all the same as the final year's contribution. It's as though contributions were made each year based on the final year's salary. The point appears simple and obvious here, but it is often missed by those who ignore the effect of investment earnings in a defined contribution system, and who disparage it as a "career average" -based method of determining each participant's pension income.

Let's finish the point by comparing the following two equations:

(1) 15% x "final salary" x 40 years = pension accumulation

(2) 1.5% x final salary x 40 years = pension income

The first equation describes a defined contribution plan, the second a defined benefit plan. If $10 of pension accumulation produces $1 of yearly pension income, then the two formulations are equivalent.

But does $10 of pension accumulation produce $1 of pension income? There is no simple answer to this seemingly-simple question. The complexity lies principally in the choice of an interest rate for the calculation that converts an accumulation into a stream of life-time income -- what for simplicity I'll call the Assumed Interest Rate, or AIR. The higher the AIR, the higher the income that can be paid out for life from a given accumulation. In round figures, an interest rate in the 8% range would produce a 10:1 ratio of accumulation to income.

An actual 8% earned rate would have to be sustained for the entire pay-out period, or else the level of income paid out would have to drop -- an unattractive occurrence for a retiree. It would be wiser, perhaps, to use a lower AIR than 8% -- one that would likely be sustainable over the lifetimes of all retirees. With a 4% AIR and actual earnings over 4% used to provide additional income in retirement, the pension stream would increase each year that total investment earnings were over 4%. Most important, it would increase retirees' incomes without any added funds from the plan sponsor, either at the time of the increase or at any later time. These increases come, of course, at a cost. With a 4% AIR, to get $1 of initial yearly income takes about $13.60. Stated differently, the

initial income produced by a 4% AIR would be roughly three quarters of the initial income that could be provided by an 8% AIR from a given accumulation.

Timing of Employee's Retirement:
"Early," "Normal," "Late," or "Phased"

Philosophically, defined contribution pension plans place more of the decision about when to retire in the hands of each individual employee than do most defined benefit plans. Defined contribution plans have a "normal" retirement age, which means the age toward which the plan funding objective is oriented. Some defined contribution plans discontinue making contributions on behalf of active employees who attain the "normal retirement age."

If an employee wants to retire before attaining the plan's normal retirement age, the income benefit payable is whatever the accumulation to that point will produce when divided by the annuity factor for the individual's attained age. Defined contribution plans don't subsidize early retirement by applying a less-than-full actuarial reduction, nor do they penalize employees who retire after the plan's normal retirement age with a less-than-full actuarial boost.

What's more, defined contribution pension plans easily accommodate a variety of styles of retirement, because starting to receive annuity income need not coincide with termination of employment from a particular employer. Under many defined contribution plans, participants may retire from an employer without beginning annuity income

until they reach their 70's -- living in the meantime on part-time employment, Social Security, interest income from personal savings, or whatever other sources they may have, timing the pattern of their income to what best suits their financial needs. Until income is started, the accumulation continues to be credited with interest, and of course the later starting age spreads the accumulation over a shorter life expectancy, making each payment larger than otherwise.

Moreover, participants in defined contribution plans can be allowed to "split the accumulation" into parts, starting each part on a different date, so that they phase into receiving their full annuity income. The chief advantage of this multiple-starting-date feature is the phased retirement environment it nurtures. The suddenness and trauma of being a worker one day and a retiree the next need not occur. Phased retirement offers a chance for employers and their workers with declining physical or mental abilities to tailor the job duties and pay to the diminished capacity of an experienced worker, while part of the pension income makes up for the lower salary. Where mandatory retirement has been abolished, voluntary phased retirement may prove to be a good personnel policy with which to replace it.

Vesting and Portability

Particularly over the last decade, the importance of early vesting to achieving meaningful levels of employer-pension income has become accepted. American workers are becoming more mobile, pulled by the demands on one worker of a spouse's employment, pushed by the high

rate of divorce, among many other forces. The problem of workers reaching retirement with a trail of nonvested forfeitures and and/or income benefits frozen at some inflation-depleted level has now become widely appreciated. As a result, vesting provisions in many plans are being shortened, though not perhaps as short as the immediate vesting that is characteristic of most defined contribution plans.

Vesting may be particularly important to workers whose skills are in especially heavy demand, since they are likely to be the most mobile. As an illustration, here's a snapshot from the pages of Business Week:

> When Robert B. Young, Jr. took over in 1980 as president of Lockheed Engineering & Management Services Co. (LEMSCO), he wanted to cut the cost of the company's pension plan, high by U.S. industry standards. He also needed a recruiting tool for engineers, computer programmers, and other technically skilled workers. Young's solution to both problems is a new retirement plan that guarantees immediate vesting and portability of pension contributions in place of a plan that required a worker to stay at LEMSCO at least 10 years to earn a pension. ... Now, early vesting is helping attract and keep employees, who rate pensions high on the list of Lockheed benefits instead of at the bottom. "Even though the old plan was very costly, it was valued low by workers because they didn't expect to see any advantage from it,' says Raymond H. Kann, a partner with Hewitt Associates, which helped developed the plan.*

Don Grubbs among others has argued that rapid, even immediate vesting, isn't enough, by itself, for pensions to achieve their intended purposes. Portability is also essential, he claims, for two reasons. First, immediate vesting of the contributions or benefits of

*"Pension Plans Get More Flexible," Business Week, November 8, 1982, p. 82.

highly mobile workers creates an administrative burden for an employer, requiring recordkeeping for numerous small inactive accounts. Second, he says that when pension plans allow terminating participants to cash out small benefit amounts, to ease the burden of the plan's administering these small sums, experience shows that those receiving cash spend the money rather than preserve it in a rollover IRA. There can be no disagreement with his observation that "the worker who changes jobs every few years has just as great a need for a retirement income as the one who works 10 or more years for the same employer."* And this need persists, we would add, even when the worker would dissipate the funds originally set aside for to meet that need.

The importance of immediate vesting goes beyond the realm of workers who change employers frequently but remain continuously in the workforce. It applies with equal, or greater, force to those who move in and out of the workforce -- disproportionately more women and minorities than others. Crubbs advocates a central clearinghouse to accept and administer small pension amounts, contending that a clearinghouse

> might make earlier vesting feasible from a cost-benefit standpoint for additional employers. Mobile workers would have a greater opportunity to receive retirement income reflective of most of their years of employment rather than just their longest job.*

---

*Donald S. Crubbs, Jr., "Vesting and a Federal Portable Pension System," Journal of Pension Planning and Compliance, Vol 9:5 (Oct. 1983), pp. 391-397.
*Ibid.

A central clearinghouse, of sorts, is what TIAA-CREF has been operating for defined contribution pension plans in higher education for 65 years. An employee at any participating institution has contributions made to a fully and immediately vested individual annuity. When a participant moves to another institution with a TIAA-CREF defined contribution retirement plan, the new employer's contributions under its plan are made to the same annuities that were issued under the plan at the previous employer. The annuity accounts of people who move to employers that are not part of the TIAA-CREF system continue to participate in the investment experience of TIAA and/or CREF, so that small accounts -- especially those established early in a worker's career -- grow and do not constitute an administrative burden.

Further, TIAA and CREF annuities designed for use in a defined contribution pension plan have no cash or loan values. In all of our communications on this point, with both participants and participating employers, we stress that the absense of cash or loan values is necessary to provide employers with the assurance they seek that the contributions will be preserved for retirement purposes, and in return for which the plan offers full and immediate vesting.

In discussing the pros and cons of his portability proposal, Crubbs notes that implementing portability may create inequities and undermine pension benefit security. He writes,

> for many defined benefit pension plans, the assets of the plan are less than the value of vested benefits. In such a case, a transfer for one participant of assets equal to 100% of the value of his vested benefits automatically reduces the ratio of the remaining assets to

> the value of the vested benefits of the remaining participants. Not only could this this reduce the benefit security of the remaining participants, in some circumstances it could increase the potential liability of PBGC ... .*

A defined contribution pension plan needn't have this problem, and it won't if the assets in which the individual accounts are invested are "marked to market," since by definition the assets of the account are equal to the value of vested benefits. In that case, funds removed from the plan have no adverse effect on the benefit security of the remaining participants.

Communicating with Plan Participants:
Clarity, Frequency, Content

It is often said of defined contribution pension plans that they do not lend themselves "to simple calculation or expression of benefits." Of course it is true that a formula-defined benefit sounds simple and clear, especially in contrast with a statement that your benefit will be whatever income the accumulation provides at the time of retirement. To forecast a defined contribution plan's benefit requires forecasts of an individual's salary levels and interest rates, among other elements. But an equally daunting set of assumptions must be made to project any particular individual's defined benefit income amount -- including assuming that the worker stays with the employer for the rest of his or her working career.

Most defined contribution pension plans can be designed to mail each participant -- those on whose behalf contributions are currently

*Ibid, p. 387.

being made as well as those with no current contributions -- a yearly report on the amount of the annuity accumulation in his or her account as of year-end. The report could also project the amount of annuity income that would be paid at the individual's retirement age under one or more preselected contribution assumptions and one or more preselectedinvestment earnings, retirement age, and lifetime income option assumptions. With appropriate software on a microcomputer, a participant could consider the effect of a variety of assumptions on the amount of retirement income the defined contribution account would produce.

In TIAA-CREF's experience, participants give these reports close attention. From the roughly three-quarters of a million reports that are mailed each year, some 50,000 people request additional income illustrations. In addition, as you'd expect, we get numerous calls and letters with a variety of questions, more or less touched off by receipt of this report. Many people keep successive years' reports, comparing each new arrival to prior years' income illustrations. While I can't claim that this is a perfect communications activity, I can report that most 84% of those responding to a 1982 survey we took of new TIAA-CREF retireees say that they were kept well informed about their annuities over the years, and most of those who didn't feel this way were people who had been in the TIAA-CREF system only a short time.

Investment Media and Investment Objectives

Since in a defined contribution pension plan the participant, not the employer, takes the investment risk, the selection of media in which to invest the contributions constitutes, in effect, part of the plan's design. What are appropriate investment media and investment objectives for a defined contribution pension plan? Media that satisfy the following two characteristics would seem to be suitable:

- Media that are likely to provide a positive real investment return, on average, over the long run -- or failing that, that are likely to provide a zero real return, on average, over the long run; and
- Media that have readily-obtainable market values, so that the account values may be easily determined, and so that if funds are withdrawn for rollover, neither the terminating worker nor the remaining participants subsidize the other.

A number of major studies indicate that short-term debt investments have these characteristics, as do long-term publicly-traded bonds and common stocks. Should defined contribution pension funds be invested in just one of these media, or spread among several? Should there be several common stock funds with different risk levels, or perhaps just one, indexed to the market as a whole? Should plan participants be free to transfer accumulations back-and-forth among funds as they prefer, or should transferability be limited? There is a diversity of viewpoints on these questions.

The main issue in the question of multiple investment alternatives arises from two different views of defined contribution pension plans. On the one hand, both employers and staff members want their

pension funds committed to achieving the plan's objective of a lifetime income sufficient to make retiring financially acceptable for the career employee by normal retirement age. On the other hand, some plan participants want greater freedom to invest the funds that play such an important role in shaping their financial security, whether or not this freedom brings with it risks of undermining the pension plan's main objective for them and the employer. After all, they ask, whose money is it, anyway?

Given the freedom to switch the funds underlying their future pensions freely among an assortment of investment managers, many people might invest the monthly contributions successfully and reach retirement age with sufficient funds intact to retire. But those who don't may have little choice except to stay at work as long as they can, even though their performance may be impaired or their desire to work diminished. Moreover, staying on the payroll is easier for them -- and its consequences tougher on employers and the rest of the workforce -- where there is no mandatory retirement age. The freedom to write one's own pension investment ticket may be in step with the times, but whether it will prove to be good pension practice for the long pull remains to be seen.

Disability and Death Benefits

Defined contribution pension plans can easily make supplementary death and total disability benefits available at virtually no extra cost. In the event of the participant's death before retirement, the

value of the participant's account can simply be paid to a named beneficiary, either as a single sum or as a lifetime income.

In the event of total disability, two types of disability insurance benefits are available. If the individual pension accounts are funded with annuities, it is easy to buy a waiver of premium benefit that continues contributions to the annuity as long as the participant's total disability continues until he or she reaches the plan's normal retirement age. Under TIAA-CREF annuities, this benefit determines contributions by reference to the contribution schedule under the pension plan, and increases contributions by 3% per year to account for salary increases that the participant could be presumed to have received had he or she continued working. The other type of disability benefit is, of course, the possibility of starting to receive income from the pension accumulation.

In Summary

Defined contribution pension plans have a number of especially attractive characteristics. Perhaps the three most outstanding are one, the simplicity of design and administration, two, the ease of communication of the plan's design and its benefits to participants, and three, the security that an always-fully-funded plan offers participants and its corollary, cost control for plan sponsors. Defined contribution pension plans can offer participants a wide variety of flexibilites, particularly in controlling the timing and amount of pension income and coordinating it with other sources of retirement

income, all at no cost to the plan. By an appropriately designed contribution rate structure, they can be integrated with Social Security. With immediate vesting provisions, they can preserve for retirement the contributions of each employer that an individual works for, increasing the likelihood that workers who change jobs, or who are in and out of the workforce during their careers, will reach retirement with an income sufficient to make retirement's challenges affordable and attractive.

DEFINED BENEFIT/DEFINED CONTRIBUTION: A COMPARISON

by

Robert D. Krinsky, President
Martin E. Segal Company

POLICY FORUM ON FEDERAL RETIREMENT

December 13, 1983

A comparison involves an analysis of two or more items to determine similarities and differences. Unfortunately, comparisons of defined benefit and defined contribution plans usually focus on the differences and treat the two types of plans as competitive rather than complementary.

In the past few years, the press and trade journals have devoted considerable attention to the relatively small number of corporations that have terminated defined benefit plans and in some cases substituted a defined contribution plan. This focus implies that the two types of plans are competitive and that a thorough evaluation will indicate which one is best for a particular situation. In fact, however, a large and growing number of private and public employees participate in both defined benefit and defined contribution plans - and the plans complement each other in meeting the retirement income needs of covered employees.

I hope that we all leave this policy forum with a "complementary perspective". It seems to us that both the public and private sectors should view defined benefit and defined contribution plans as complementary rather than competitive.

Prevalence of Defined Benefit Plans

Defined benefit plans predominate in the public sector. Almost all full-time public employees are covered by retirement systems that provide pensions based, in whole or in part, on the member's final average salary. With the exception of public higher education employees who participate in TIAA-CREF plans, a very small proportion of public employees are covered by a "basic" retirement system that provides money purchase retirement benefits, i.e., benefits determined solely by the actuarial conversion of an accumulated account. Historically, a relatively large number of public employees were covered by combination plans (plans that used a money purchase approach with respect to employee contributions and a final average salary formula to determine the benefits provided from employer funds) but most of these so-called combination plans have now been converted to full defined benefit plans.

Among public employees covered by retirement systems, practically all federal employees and more than nine out of ten state and local employees who qualify for retirement benefits will have their benefits determined on the basis of some measure of final average salary. Given the recent trends in inflation and public employee salaries, the advantages to covered employees of final average salary benefit formulas are obvious.

While other methods have been used to adjust the benefit structure of retirement plans to recognize economic changes up to the point of retirement, basing benefits on final average salary appears to be the most systematic and equitable method of automatically protecting the real value of benefits in relation to rising salaries. Under this type of benefit formula the basic purpose of the retirement system - to replace some portion of earnings, depending on length of service, in the event of old age, disability and death - is directly related to existing economic conditions. Moreover, final average salary benefit formulas reward employees who realize a steep progression in salary and may thereby encourage long-term service and provide an incentive for improved performance.

In addition, federal retirement systems and a majority of state and local systems have dealt with the issue of protecting the purchasing power of retirement benefits during the lengthening retirement period. In general, the benefits provided by Social Security and federal retirement systems have been fully adjusted for rising prices as measured by the CPI; state and local retirement systems, on the other hand, have used a wide variety of approaches to adjust benefits after retirement and partially protect the erosion in purchasing power caused by rising prices.

Supplemental Defined Contribution Plans

Given the history of public employee retirement systems and the prevalence of final average salary defined benefit plans, we suspect that the "basic retirement benefits" for a new federal employee are likely to be provided through a defined benefit retirement system. Your Committee and the Congress may also want to evaluate the implications of creating one or more "supplemental plans" which provide benefits based on the amount accumulated in an individual's account.

Recent changes in federal law have expanded the number of supplemental retirement plans which are or could be made available to public employees. The expanded availability of these plans may alter how employees perceive and plan for retirement. In the future, we expect that the retirement decisions of an increasing number of public employees will be influenced not only by the level of benefits provided by the "basic" defined benefit retirement system, but also by the dollar amount accumulated by the employee under various "supplemental" defined-contribution-type plans.

Supplemental plans which are or could be made available to public employees include the following:

- Section 457 plans (public employee deferred compensation)
- Section 403(b) plans (tax sheltered annuities for school employees)
- Section 401(k) plans (cash or deferred plans)
- Thrift plans
- Individual retirement accounts
- Deductible voluntary employee contributions
- Employer pick-up plans (per Section 414(h)(2))

Although the technical elements of these supplemental plans vary significantly, they share at least three common characteristics: (1) all are defined contribution plans; (2) the contributions are tax deferred - at least for federal income tax purposes; and (3) participation in these plans is voluntary - with the exception of most 414(h) employer pick-up plans.

The characteristics of supplemental plans complement some emerging trends affecting retirement, and offer a tax-sheltered means for public employees to save for retirement. A series of events have combined to increase the popularity of defined contribution plans. The growth of these plans in the private sector invites a "me too" approach in the public sector. While many public employees prefer the few decisions required by defined benefit retirement systems (typically limited to payment option), a growing number recognize the desirability of tailoring retirement income to meet their own specific income and tax planning requirements. Voluntary supplemental defined contribution plans offer this flexibility.

Our experience indicates that a growing number of public employees are now prepared to make the investment decisions required in many supplemental plans. Inflation and fluctuating interest rates during the past decade encouraged many people to forsake the passive security of their savings accounts for the less familiar territory of money market funds and special time deposits. Economic changes required new investment decisions, expanded the availability of new investment products, and resulted in a substantial increase in the investment awareness of many employees.

Supplemental defined contribution plans offer some current income tax relief, especially to that enlarged and growing class of public employees who are members of two wage-earner families. The assumption is, of course, that Congress will not materially alter the tax-favored treatment which employees now expect to enjoy when they reach retirement age and begin to receive the "taxable" benefits of these supplemental plans.

The Social Security Amendments of 1983 provide an opportunity - and a challenge - to develop creatively-designed retirement programs for new federal employees. We suggest that consideration be given to the feasibility of developing defined benefit and defined contribution plans designed in a complementary fashion to meet specified retirement income objectives. As a basic structure for a new program, your Committee may want to consider the implications of establishing a "basic" defined benefit plan and at the same time offering new federal employees the opportunity to participate in one or more "supplemental" defined contribution plans.

Comparison of Major Features

In view of the topic assigned to me, I feel compelled to make some brief comments on the major features of defined contribution and defined benefit plans.

The EBRI volume - Economic Survival in Retirement: Which Pension Is For You? (1982) - comprises articles presented at a May 20, 1982 policy forum on understanding the differences between defined benefit and defined contribution plans. The "Forward" by Dallas Salisbury suggests that the relative attractiveness of defined contribution and defined benefit plans is changing, but that the recent emphasis on defined contribution plans has not been accompanied by a thorough examination of the potential effects of such plans on future retirement income security.

In his "Introduction" to the EBRI volume, my colleague Robert Paul points out that:

> "Today, workers who are entering the labor force for the first time are exposed to a different type of environment. Private defined benefit plans and defined contribution plans are now taken for granted. Past service is not as important in the minds of today's young workers, because they have a full career in which to earn a retirement benefit. Thus, people are asking themselves: Which pension is the better alternative? Which retirement income components offer an effective blend? Do we need both defined benefit and defined contribution plans?
>
> Moreover, there are more and more two-worker families. Both members of such families may consider individual savings opportunities as well as the questions surrounding the options of defined contribution and/or defined benefit plans.
>
> Finally, there is the general question of whose responsibility it is to provide retirement income. Is it the government's responsibility? Is it the private employer's responsibility? Is it the individual's responsibility? Or is it the responsibility of all three parties?
>
> There is increasing emphasis today on the notion that it is up to individuals to provide a greater portion of their own retirement income security. This is also contributing to our reexamination of the issues surrounding the question of Economic Survival in Retirement: Which Pension Is for You?"

To a large degree, Bob Paul's introductory comments also apply to new federal employees. As compared with almost all current federal employees, they will definitely be exposed to a different retirement program structure. Because new federal employees will be covered under Social Security, the extent to which the various types of Social Security benefits meet the economic needs of a typical new federal employee needs to be recognized - and the structure of the new retirement program needs to take account of Social Security coverage.

You are all familiar with the major differences between defined benefit and defined contribution plans. (See the EBRI volume for a discussion of differences from various perspectives: a labor perspective, a corporate perspective, and a participant's perspective.)

The difference in employer commitment is basic: the employer undertakes to provide a specified level of retirement income in the defined benefit plan, and to make a specified contribution to individually-allocated investment accounts in a defined contribution plan. In terms of individual equity, the principle underlying a defined benefit plan is one of "equal benefits" - whereas a defined contribution plan generally defines individual equity in terms of "equal contributions" and accepts the necessarily unequal benefits that result from equal employer contributions.

A defined contribution plan that is strictly a money-purchase arrangement is necessarily prospective. Benefits derive only from contributions and investment income after the plan begins. The employee's length of service or salary history prior to the creation of the plan is ignored. A defined benefit plan, on the other hand, is usually retrospective as well as prospective. In the early years of the plan a significant part of the employer contribution is usually allocated to financing benefits based on service rendered before the plan became effective.

Another major difference between the plans - one that is frequently emphasized - is the party who bears the risk of future investment performance. A defined benefit plan deals directly with the level of benefits to be provided for covered employees, whereas the benefits produced by defined contribution plans vary depending on future investment performance (and possibly certain other factors such as terminations and future profits).

Because investment risk is borne by the employee in a defined contribution plan, some people feel that employees "own" the assets in such a plan to a greater degree than in a defined benefit plan. However, if pensions are perceived essentially as a form of deferred compensation, differences

between the plans can be considered primarily in terms of individual equity in relation to a given employer contribution - rather than in terms of who "owns" the assets. We understand that this broad "ownership issue" (which encompasses the issues of benefit security and benefit guarantees) is important to certain federal employee unions, because they believe that a defined contribution plan can be structured in a manner that results in "ownership" and control of the assets by covered employees. On the other hand, Congress apparently retains the authority to amend the provisions of defined benefit plans covering most federal employees.

In considering the design of retirement programs for new federal employees, your Committee will undoubtedly want to evaluate this "ownership-benefit guarantee issue", and consider the differences, if any, in Congress' authority to modify the provisions of defined benefit or defined contribution retirement programs for new federal employees.

Allocation of Contributions

Contributions required to finance the benefits promised by a defined benefit plan can vary. Variability depends on numerous factors, including changes in the characteristics of participants, the investment return on plan assets, and changes in the benefit design itself. For most defined benefit plans in the public sector, contributions are determined on the basis of a specific actuarial funding method which seeks to smooth contribution requirements as a percentage of payroll over a long period. Contributions are determined on an aggregate basis for all participants rather than on an individual basis. This last point is sometimes overlooked by those who do not realize that employer contributions to a defined benefit plan may have little relationship to the value of benefits earned by a specific employee during that year. Rather, the employer contributions reflect the overall funding requirements of the plan and are not allocated to individual accounts.

A substantial majority of public employee retirement systems are contributory defined benefit plans. Such plans maintain individual accounts for each participant and generally provide that the amount in the employee's contribution account will be refunded upon termination of service. Some employees covered by contributory defined benefit plans incorrectly perceive the employer contribution as also "belonging" to the participant, and this gives rise to some of the confusion surrounding the "ownership issue". A participant who terminates before vesting and elects to receive a refund of his contributions to a defined benefit plan does not forfeit employer contributions which "belong" to him. Employer contributions to a defined benefit plan are not allocated to individual employee accounts, but rather reflect the amount needed, in aggregate, to fund the benefits promised in accordance with the established funding method.

The contribution-oriented character of a defined contribution plan tends to direct attention to the level of the contribution and the dollar amount accumulated in an individual's account. Unfortunately, this focus on the total dollar amount of the account is often not accompanied by even a very rough notion of the level of lifetime pension benefits that can be provided by the accumulated amount. Moreover, individuals participating in defined contribution plans may not realize that the amount of retirement income produced by the plan depends on market conditions prevailing at retirement; identical account balances will produce monthly annuities that vary considerably depending on interest and annuity rates in effect at the time of retirement.

Summary of Differences

A schedule summarizing differences between defined benefit and defined contribution plans is attached. Some brief comments on a few of the differences follow:

- Early vesting. Defined contribution plans generally have very early vesting. This feature is attractive to new employees who do not expect to remain in service long enough to vest under a defined benefit

plan. The "longer-staying" employees - including those new employees who do not expect to remain in covered employment but actually do! - may see it differently: (a) early vesting uses some of the financial resources of the plan for a short-term employee, and (b) it requires the plan to maintain many relatively small individual accounts for a long period of time.

- Early distribution and loan provisions. A defined contribution plan usually provides for payouts from the employee's account in the event of termination of covered employment (even if termination occurs years before actual retirement), and it may also have provisions for emergency loans. Both of these features are attractive for some employees.

- Disability pensions and death benefits. A defined benefit plan makes whatever provision it considers desirable for these contingencies. Under a defined contribution plan, on the other hand, all that is immediately available for disability pensions and death benefits is the balance in an individual's account - and in the early years of the plan that balance will not be substantial. While this problem can be solved in a defined contribution plan, it requires separating a piece of the contribution and using it to buy disability insurance or death benefits, or both.

- Post-retirement benefit adjustments. As noted, public employee retirement systems have used a variety of methods to adjust benefits after retirement. The ability of a defined benefit plan to partially compensate retirees for the erosion in purchasing power caused by rising prices is largely

a function of the employer's willingness to contribute more to the plan. Under the defined contribution rationale, however, all employer contributions for a given employee have already been made prior to retirement. When viewed in this perspective, defined contribution plans are more limited in coping with the post-retirement adjustment problem than defined benefit plans. In another sense, however, the development of variable annuities and automatic "investment-sharing provisions" indicate that defined contribution plans can incorporate mechanisms providing for benefit adjustments related to investment performance during the retirement period.

Concerns Regarding Defined Contribution Plans

A comprehensive public policy regarding defined contribution plans apparently has not been formulated. However, recent federal legislation has had the effect of encouraging the development of such plans. A variety of tax provisions enacted in recent years have tended to "favor" defined contribution plans, and others have had the effect of impeding the development of defined benefit plans.

Several individuals and organizations have expressed concerns regarding the growing popularity of defined contribution plans. Our concerns include such issues as lump sum payouts, plan costs, cost/benefit comparisons, and investment results.

Lump sum payouts. As noted, defined contribution plans usually provide for lump sum distributions (which now receive more favorable tax treatment). If an employee's "basic" retirement benefits are to be provided through a defined contribution plan, should public policy favor distributions in the form of lifetime pension payments rather than lump sum distributions? How will the increasing utilization of lump sum payouts affect future retirement benefit levels?

Plan costs. For a given contribution, a defined benefit plan can generally provide more in the way of retirement benefits than a defined contribution plan. This results from the greater flexibility in financing defined benefit plans (which do not have to be fully funded), the relatively larger forfeitures in such plans, and the ability to take forfeitures into account in advance in a defined benefit plan. These cost considerations are often overlooked by proponents of defined contribution plans, who tend to emphasize only that certain categories of employees are likely to receive larger retirement benefits from a defined contribution plan than from a defined benefit plan.

Cost/benefit comparisons. Studies comparing the costs and benefits of the two types of plans may be misleading (sometimes inadvertently and sometimes deliberately). In some instances comparisons are made on the basis of investment return assumptions that vary substantially - as if it is reasonable to assume that the assets of the defined benefit plan will earn an average return of 7% or 8%, but that the assets of the defined contribution plan will produce a much higher rate of return. In addition, some cost/benefit comparisons totally ignore future salary increases and the differences in projected replacement ratios resulting from changes in assumed rates of investment return and salary increases.

The table which follows shows the replacement ratios resulting from a 1%-of-salary annual contribution based on various combinations of investment return rates and salary increases. To take one example, consider an employee who enters service at age 35 and retires at 65 under a defined contribution plan with a 5%-of-pay annual contribution: the replacement rate for this employee will be 18.5% of final salary if the investment return/salary increase combination is 7%/6%, and 24.0% based on a 9%/7% combination. (In this example the replacement rate produced by a 9%/7% combination is almost 30% higher than the replacement rate produced by a 7%/6% combination!) In our opinion, meaningful cost/benefit comparisons should include full consideration of the replacement ratios that will be produced by various economic environments.

DEFINED CONTRIBUTION PLAN ACCUMULATIONS

PROJECTED REPLACEMENT RATIOS

Ratios of (a) retirement income produced by a 1%-of-salary annual contribution, to (b) final salary during the year prior to retirement at age 65

Rates of investment return/salary increases	Entry Age 25	30	35	40	45	50	55	60
7/5	6.3%	5.2%	4.3%	3.4%	2.6%	1.8%	1.2%	0.6%
7/5½	5.7	4.8	4.0	3.2	2.4	1.8	1.1	0.5
7/6	5.2	4.4	3.7	3.0	2.3	1.7	1.1	0.5
8/6	6.7	5.6	4.5	3.6	2.7	2.0	1.2	0.6
8/6½	6.1	5.1	4.2	3.4	2.6	1.9	1.2	0.6
8/7	5.5	4.7	3.9	3.2	2.5	1.8	1.2	0.6
9/7	7.1	5.9	4.8	3.8	2.9	2.1	1.3	0.6
9/7½	6.5	5.4	4.5	3.6	2.8	2.0	1.3	0.6
9/8	5.9	5.0	4.2	3.4	2.7	1.9	1.3	0.6

Notes: (1) Annuity conversion based on 1971 Group Annuity Mortality Table.

(2) To convert above ratios to percent of final average salary (rather than percent of final salary), multiply by the following:

Assumed Annual Salary Increase	3-Year Average	5-Year Average
5	1.049	1.100
5½	1.054	1.110
6	1.059	1.120
6½	1.064	1.130
7	1.068	1.140
7½	1.073	1.150
8	1.078	1.160

Investment results. The increasing emphasis on individual responsibility for retirement savings - and the trend toward giving individuals more flexibility in allocating retirement savings to various investment media - raise broad questions regarding the adequacy of future retirement benefits. A recent examination of IRA investment patterns (see March 1983 EBRI Issue Brief, "Individual Savings For Retirement: A Closer Look") indicates that only about 17% of all IRA assets were in accounts that achieved an 8.7% to 9% annual real rate of return over the 5 years ended December, 1982. The average real rate of return for the remaining 83% of IRA holders was less than 1% over this 5-year period. Based on its analysis of IRA investment returns, EBRI concluded that: "The choices made by IRA investors and the real rates of return they have achieved to date do not support the arguments or assumptions of those advocating proposals for greater reliance on IRAs." We agree that proposals placing greater emphasis on individual responsibility for retirement savings need to be thoroughly evaluated.

* * *

Defined benefit and defined contribution plans offer different approaches to retirement savings. Neither is perfect. Consequently, we expect that an increasing number of employees will be covered by both types of plans. In our opinion the two types of plans should be viewed as complementary rather than competitive. Both defined benefit and defined contribution plans should continue to have a role in our aggregate retirement income system.

Defined Benefit Plan and Defined Contribution Plan

Feature	Defined Benefit	Defined Contribution
Benefit for future service	Defined formula, considered supportable by overall financing of the plan.	What the accumulation in the employee's account can buy or support.
Benefit for past service	Formula defined by the plan.	None.
Increase amendment for prior service	Defined formula.	Not possible.
Disability pension	Defined formula.	Account balance, unless part of contribution is used to buy disability insurance.
Death benefits	Defined formula.	Account balance, unless part of contribution is used to buy life insurance.
Vesting	10 years covered service, or less, as fixed by plan.	Early vesting, such as immediate or 1-5 years covered service.
Early retirement	As provided by plan.	What the employee's accumulation can buy or support.
Pension payments	Life annuity or joint-and-survivor or other options offered by plan.	Lump sum or similar range of options offered by plan.
Early cash-outs on termination	Possible, but not simple to administer.	Possible and relatively simple.
Loan from the plan	Possible, but not simple to administer.	Relatively simple.
Investment experience	Gains and losses - for plan as a whole, benefits not directly affected.	Gains and losses - individual employee accounts affected directly.
Investment options	No options offered to employee.	Options usually offered to employee.
Administration	Maintenance of "regular data base" - periodic actuarial valuations, at least once every three years.	Maintenance of individual accounts - periodic valuation of account balances, usually several times a year.