

# Worker Investment Decisions: An Analysis of Large 401(k) Plan Data

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Issue Brief

- This *Issue Brief* examines the asset allocation decisions of 401(k) plan participants working for three large employers (AT&T, IBM Corporation, and New York Life Insurance Company) with a total of 180,000 employees. It is a companion to the June 1996 *EBRI Issue Brief*, "Contribution Rates and Plan Features: An Analysis of Large 401(k) Plan Data."
- A fundamental question asked in business and public policy circles is whether workers will accumulate adequate assets in their 401(k) plans for retirement. In addition, the dialogue over the future of Social Security has now begun to incorporate discussion of individual accounts and investment choice. At the same time, many state and local governments are considering the adoption of 401(k)-type plans. Some employers in both the public and private sectors are considering the replacement of defined benefit plans with defined contribution plans. This report is intended to assist these evaluation efforts.
- A real dichotomy exists in the allocation behavior of workers within similar demographic groups. A significant fraction of participants, particularly younger ones, are heavily diversified into equities, while at the same time a large percentage of their peers hold zero equities in their accounts. The data indicate that it may be the low earning younger participants who do not appreciate the advantages of diversifying their 401(k) portfolios to include equities. This puts them at risk of accumulating insufficient assets to fund the retirement lifestyle they desire or of being unable to retire when they desire.
- At the same time, there is evidence within these plans of workers matching their investment patterns with their time horizons in a textbook manner, e.g., older workers having larger allocations devoted to nonequity investments than their younger colleagues.
- While data on average allocations are informative, they mask much of the detail regarding the variation in investment preferences among workers—information crucial for plan design and policymaking. The findings in this report make clear the need to focus on the distribution of allocations when discussing asset allocation.

## Table of Contents

### Text

Introduction .....	3
Previous Research .....	3
Worker Education Programs .....	4
Company A .....	4
Company B .....	4
Company C .....	5
Asset Allocations .....	5
Company A .....	5
(table 1, table 2, table 3)	
Company B .....	9
(table 4, table 5, table 6)	
Company C .....	11
(table 7, table 8)	
Implications .....	13
(chart 1, chart 2)	
Conclusion .....	14
Bibliography .....	15

### Tables

Table 1, Average Allocations of Participant Account Balances, Company A Retirement Savings Plan, 1994 .....	6
Table 2, Allocation Distributions of Participant Account Balances, by Participant Age and Tenure, Company A and Company C Retirement Savings Plans, 1994 .....	7
Table 3, Allocation Distributions of Participant Account Balances, Company A Retirement Savings Plan, 1994 .....	8

Table 4, Average Allocations of Participant Contributions, Company B Retirement Savings Plan, 1994 .....	9
Table 5, Allocation Distributions of Participant Contributions, Company B Retirement Savings Plan, by Participant Age and Tenure, 1994 .....	10
Table 6, Allocation Distributions of Participant Contributions, Company B Retirement Savings Plan, 1994 .....	11
Table 7, Average Allocation of Participant Account Balances, Company C Retirement Savings Plan, 1994 .....	12
Table 8, Allocation Distributions of Participant Account Balances, Company C Retirement Savings Plan, 1994 .....	13

### Charts

Chart 1, Equity Investment Patterns Among Young Plan Participants .....	14
Chart 2, Heavy Nonequity Investments by Participant Age .....	14

EBRI thanks AT&T, IBM Corporation, and New York Life for providing the data analyzed in this *Issue Brief*. This *Issue Brief* is a product of EBRI's ongoing Defined Contribution Project. Entities interested in providing data, funding, or learning more about the project's advisory board can contact Deborah Milne at (202) 775-6361. Entities interested in supplying data for analysis can contact Jack VanDerhei at (202) 775-6327. Entities interested in knowing more about the project's research agenda can contact Paul Yakoboski at (202) 775-6329.

## Introduction

This *Issue Brief* examines the asset allocation decisions of 401(k) participants.<sup>1</sup> It is a companion to the

Employee Benefit Research Institute's (EBRI) June 1996 *Issue Brief*, "Contribution Rates and Plan Features: An Analysis of Large 401(k) Plan Data," which analyzed the contribution behavior of workers at three large employers sponsoring 401(k) plans (AT&T, IBM Corporation, and New York Life Insurance Company). The previous report focused on how participant contribution decisions were directly impacted by plan specific features, such as the matching formula and the limits imposed on participant contributions (both by the plan and by law).

**As with contribution rates, asset allocation decisions are an area of great interest among plans sponsors and public policy officials. A fundamental question often asked today in both business and public policy circles is whether workers will accumulate adequate assets in their 401(k) plans to help fund their retirement. Obviously, the decisions they make with regard to how their 401(k) money is invested will go a long way toward answering this question.**

The dialogue on the future of the Social Security program has now begun to include discussion of individual retirement plan accounts and investment choice. This report is intended to assist in the evaluation of these issues. At the same time, many state and local governments are considering adoption of 401(k)-type plans, and some employers in both the public and private sectors are considering the replacement of defined benefit plans with defended contribution plans. Again,

this report is intended to assist these evaluation efforts.

According to the 1995 EBRI/Mathew Greenwald and Associates Retirement Confidence Survey,<sup>2</sup> 95 percent of plan participants utilizing educational material provided to them reported that the material included a description of the investment options available in the plan, and 69 percent reported that the material covered the principles of asset allocation and diversification. Almost one-half (46 percent) of these workers reported that the material led them to reallocate their money among the options available in the plan. This effect was slightly more likely among those with a high school degree or less (50 percent) than among those with more education (45 percent).

It is important to have a clear understanding of the investment decisions that workers are currently making and how these decisions vary with worker demographics. Unfortunately, data rich enough to provide this type of information has been sorely lacking. This *Issue Brief* analyzes data perfectly suited to shed light on these issues. It uses plan-specific data covering all participants in three plans (not just a sample of participants) to analyze investment decisions and how these decisions vary with worker demographics such as age, salary, and tenure.

This report provides clear evidence that setting policy based on the "average" participant or the "average" asset allocation may not make sense.

## Previous Research

Results of one recent study suggest that younger workers are generally more aggressive in their invest-

<sup>1</sup> These two Issue Briefs build on the April 1995 EBRI Issue Brief, "Can We Save Enough to Retire? Participant Education in Defined Contribution Plans," which the Employee Benefit Research Institute published as a first step in its work on the issue of investment choice in individual retirement plan accounts; the articles published in *When Workers Call the Shots: Can They Achieve Retirement Security?* (Washington, DC: Employee Benefit Research

Institute, 1995); and the January 1996 EBRI Issue Brief, "Participant Education: Actions and Outcomes."

<sup>2</sup> See Paul Yakoboski, "Are Workers Kidding Themselves? Results of the 1995 Retirement Confidence Survey," EBRI Issue Brief no. 168 (Employee Benefit Research Institute, December 1995).

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ment behavior than older workers and that higher wage workers are somewhat more aggressive in their investment behavior than lower wage workers. The study by Goodfellow and Schieber (forthcoming) investigated the investment elections of 36,000 participants in an attempt to determine whether 401(k) asset allocations were as conservative as suggested by the concentration in fixed income funds.

The total number of participants in the plans analyzed in their study ranged from around 150 to 6,000. Some larger plan data were excluded because there were strong financial incentives to invest in company stock.

This *Issue Brief* investigates three very large plans with an average of 60,000 participants per plan. Two of the plans included offered employer securities as an investment option, although no restrictions were placed on the asset allocation choices for either employer or employee contributions.

## Worker Education Programs

The three plans used for analysis have well developed educational programs designed to

assist workers in making appropriate decisions regarding their participation in the plans.

### Company A

Employees of Company A received information covering a number of topics and issues regarding their 401(k) plan. The summary plan description covered basic plan information: who was eligible to participate and how to sign up; participant contribution limits; sponsor matching contribution provisions; vesting provisions; explanation of tax deferral; loan and withdrawal features; distribution options at retirement and job termination; explanation of the investment options available (including their objective and investments, plus

historical return statistics); information on the Employee Retirement Income Security Act of 1974 (ERISA); and sources of more information (such as operating expenses, prospectuses, etc.).

Company A participants received quarterly statements reporting the detailed status of their personal accounts, including investments and earnings. In addition, they received periodic informational material (including the quarterly *TDSP Newsletters* and summary plan updates) designed to further understanding of the plan, investing in the plan, and changes in the plan. Examples of the topics covered by the newsletters in 1993 include value of life-cycle investing, explanation of two new fund options, a history of the plan and its features, performance reports, and service center updates. Monthly performance reports for each investment option were available on an electronic bulletin board.

Company A participants were also provided with a personal investment guide, which compiled information included in the newsletters over time, such as the advantages of beginning to save early and the effects of compounding, understanding the effects of inflation on savings, understanding risk and matching investment risk with one's individual situation, the value of diversification and concepts of asset allocation, making investment choices over a life cycle, and risk/return characteristics of available options.

There was also a voice response system allowing individuals to determine account balances and rates of return, request forms, change future investment contributions, transfer existing fund balances, initiate loans, etc.

### Company B

In Company B, as workers approach their one-year anniversary of employment, they receive a packet of materials regarding the plan and a letter encouraging them to participate. The letter highlights the role the plan can play in providing savings for both short- and long-term goals and the advantage of the employer

matching contribution.

The packet contains an enrollment booklet. The booklet covers the advantages of the plan as a long-term savings vehicle by highlighting the power of the company match, the benefits of tax-deferred investing, and the ease of payroll deduction. It includes descriptions of plan features such as directing contributions; contribution limits; the company match; vesting; investment options; asset transfers; and loans, withdrawals, and distributions. The booklet describes mutual funds and how they work. The available investment options are then described in more detail, including their advantages and disadvantages and how they can fit in an investor's portfolio. The booklet then discusses the principles of asset allocation, diversification, and matching asset allocations with investor time horizons. It also discusses the power of compounding over time and the principle of dollar cost averaging and includes a summary plan description and fund prospectuses.

Workers have access to an interactive telephone voice response system. This system can be used to enroll in the plan, initiate loans and nonhardship withdrawals, check account balances and loan status, and check and change contribution rates and asset allocations.

In addition to quarterly account statements, all employees (participants and nonparticipants) receive quarterly newsletters. These newsletters cover topics such as long-term planning, diversification, market timing, the effect of economic trends on financial planning, and plan updates. Every issue also gives fund performance information and has a questions and answer section.

## Company C

According to the principles of Company C's retirement saving plan, the sponsor will educate the employees about their responsibility to provide for their own financial security through participation in the employment-based plan; the sponsor will provide employees with the tools necessary to make informed decisions; and

employees must make informed decisions and accept responsibility for these decisions.

Company C provided a number of internal educational publications for this purpose: a monthly newsletter for active employees, a quarterly magazine for retirees, quarterly/semi-annual statement inserts that accompany all savings plan account statements, an annual total remuneration report, and a savings plan reference book for all eligible employees. There was also a three-hour savings plan seminar providing both plan-specific information and basic financial education. Eight-hour preretirement seminars were offered to employees and spouses within five years of retirement.

Financial planning was available for executive employees through one-on-one counseling. For occupational employees, financial planning was offered through eight-hour group sessions open to employees and their spouses.

## Asset Allocations

### Company A

Company A's 401(k) plan had eight investment options available to plan partici-

pants in 1994. Four were equity based: a large company equity fund, a small company equity fund, a balanced fund, and an international equity fund. Three were nonequity-based funds: a money market fund, a fixed income fund, and a U.S. government bond fund. There was also a Company A stock fund. The participant chose how to invest employee contributions as well as employer matching contributions.

**Average Allocations—The average account balance allocation in the Company A 401(k) plan in 1994 was 9 percent in the money market fund, 23 percent in the large company equity fund, 40 percent in the fixed income fund, 14 percent in the small company equity fund, 6 percent in Company A**

Table 1  
**AVERAGE ALLOCATIONS OF PARTICIPANT ACCOUNT BALANCES, COMPANY A RETIREMENT SAVINGS PLAN, 1994**

	Money Market Fund	Large Company Equity Fund	Fixed Income Fund	Small Company Equity Fund	Company A Stock	U.S. Government Bond Fund	Balanced Fund	International Equity Fund
Total	8.8%	23.4%	40.0%	14.0%	6.3%	0.9%	2.3%	4.1%
Age								
20–29	15.6	21.9	23.3	22.4	6.9	1.6	2.7	5.6
30–39	9.2	24.0	37.3	15.6	6.3	1.0	2.2	4.4
40–49	8.3	23.1	43.5	12.2	6.3	0.8	2.3	3.6
50–59	6.4	23.1	45.1	11.3	6.5	0.8	2.6	4.2
60 and over	8.1	21.6	50.9	9.1	4.9	0.7	1.8	2.8
Salary								
\$10,000–\$19,999	26.4	13.4	38.2	12.2	6.1	1.0	0.8	1.9
\$20,000–\$29,999	16.9	15.8	49.0	9.3	4.9	0.7	1.3	2.1
\$30,000–\$39,999	11.3	20.0	45.2	12.0	5.7	0.8	1.8	2.9
\$40,000–\$49,999	8.6	23.5	39.4	14.9	6.4	1.0	2.2	4.1
\$50,000–\$59,999	7.4	25.5	37.3	15.4	6.6	0.9	2.4	4.5
\$60,000–\$74,999	6.6	26.1	36.9	15.3	6.7	0.9	2.7	4.9
\$75,000–\$99,999	5.9	26.2	36.6	14.9	6.9	1.0	3.1	5.4
\$100,000 or more	5.0	25.0	36.5	14.7	7.2	1.1	4.1	6.3
Tenure								
2 years or less	38.0	11.9	10.6	13.8	8.5	1.6	7.3	8.4
2+ years–5 years	17.8	19.3	17.6	24.8	9.2	2.5	3.0	5.8
5+ years–10 years	10.6	24.5	31.1	19.2	6.7	1.1	2.1	4.6
10+ years–15 years	7.4	24.3	42.6	13.4	5.7	0.8	1.9	3.9
15+ years–25 years	7.0	23.4	45.7	11.7	5.8	0.7	2.1	3.5
Over 25 years	5.0	23.9	45.6	11.3	6.7	0.7	2.5	4.1
Gender								
Male	8.2	23.4	38.9	14.4	7.3	0.9	2.4	4.4
Female	10.3	23.4	42.7	13.1	3.9	1.0	2.2	3.4
Marital Status								
Single	11.4	22.8	37.6	14.9	5.8	1.0	2.2	4.2
Married	8.1	23.5	40.6	13.9	6.5	0.9	2.4	4.1
Unknown	8.2	20.3	50.5	9.8	5.1	0.9	2.0	3.1
Race								
White	8.2	23.8	40.3	14.1	6.2	0.9	2.4	4.1
Nonwhite	12.1	21.6	38.9	13.8	6.8	1.0	1.8	4.1

Source: Employee Benefit Research Institute.

**stock, 1 percent in the U.S. government bond fund, 2 percent in the balanced fund, and 4 percent in the international equity fund (table 1). This represented a total of 44 percent in equity funds, 50 percent in nonequities, and 6 percent in Company A stock.**

**Older participants tended on average to have less of their account balances allocated to the more aggressive equity funds (small company and international) (table 1).** There was no consistent variation in allocations to the other two equity funds (large company and balanced) with age. Financial professionals generally advise workers to reallocate funds out of their more aggressive options as they age and approach retirement. On average, older workers held a much larger fraction of their account portfolio in the fixed income fund than younger workers, consistent

with the conventional wisdom of matching asset allocations with time horizons. Participants in their 20s held 23 percent of their assets in the fixed income fund on average, compared with 51 percent for participants aged 60 and over (table 1). The fraction of assets allocated to the money market fund paradoxically decreased as age rose. Allocations to the government bond fund did not noticeably vary with age.

**The same general patterns were observed as tenure varied, except that longer tenured workers allocated a larger percentage of their assets to the large company equity fund than short tenure workers (table 1). However, tenure would appear to have had an effect independent of the effect of age.** Longer tenured workers tended to invest a smaller fraction of their 401(k) portfolio in Company A stock, and this effect remained present controlling for

Table 2  
**ALLOCATION DISTRIBUTIONS OF PARTICIPANT ACCOUNT BALANCES, BY PARTICIPANT AGE AND TENURE,  
COMPANY A AND COMPANY C RETIREMENT SAVINGS PLANS, 1994**

	Nonequity Investments			Equity Investments			Company Stock		
	5 years or less	5 to 10 years (tenure)	Over 10 years	5 years or less	5 to 10 years (tenure)	Over 10 years	5 years or less	5 to 10 years (tenure)	Over 10 years
<b>Company A</b>									
Age									
20–34	39.8	41.2	47.3	52.4	52.4	47.1	7.8	6.4	5.6
35–54	45.7	45.3	52.3	44.3	47.5	41.6	10.0	7.2	6.1
55–65	50.0	51.5	56.8	35.9	43.3	38.2	14.1	5.2	5.0
<b>Company C</b>									
Age									
20–34	14.1	24.9	30.5	44.8	34.7	29.3	41.1	40.4	40.2
35–54	17.7	27.2	28	43.3	33.8	28.1	39	39	43.9
55–65	19.3	32.1	36.1	39.7	30.8	25.6	41	37.1	38.3

Source: Employee Benefit Research Institute.

age (table 2). In addition, longer tenured workers allocated a larger share of their account balances to the nonequity options, and again this effect occurred within differing age groups. Finally, equity allocations tended to rise and then fall with tenure within the older age brackets (ages 35–54 and ages 55–65); within the 20–34 age bracket it was constant up to tenure of 10 years, and then it dropped.

As salary levels increased, balance allocations to the equity funds increased on average for three out of the four funds available (the large company fund, the balanced fund, and the international equity fund) (table 1). Along with this, average allocations to the nonequity funds decreased for two of the three funds offered (the money market fund and the fixed income fund). As is discussed in the following section, these findings may indicate that higher earners tend to be more sophisticated, specifically, less risk averse investors with their retirement savings than their lower earning colleagues.

*Allocation Distributions*—While informative, data on average allocations mask much of the detail regarding the variation of investment preferences among workers with differing demographic characteristics. This section examines the distribution of participant account balances to the equity funds, nonequity funds, and Company A stock and how these distributions vary across groups of participants.

**Twenty-one percent of plan participants at Company A had none of their account balance invested in any equity-based funds (this does not include the Company A stock fund)** (table 3). It is

generally recognized that individuals with a relatively long investment horizon should diversify into equity investments because of their historically greater longer term performance (despite the greater volatility) and the need to outpace inflation when accumulating retirement assets. In this light, it is particularly noteworthy that **17 percent of participants in their 20s and 18 percent of participants in their 30s had none of their account balances invested in the equity options. In addition, 41 percent of participants earning \$10,000–\$29,999 (who tend to be younger) had no equity investments** (table 3).

**On the other hand, 21 percent of all participants had over 80 percent of their account balances invested in equity-based funds** (table 3). **Twenty-seven percent of participants in their 20s and 22 percent of participants in their 30s had heavy equity investments (greater than 80 percent of account balances).** Relatively few low earning participants were invested heavily in equities with their 401(k) account balances. At higher income levels, about one-quarter of plan participants had over 80 percent of their assets invested in equities. Higher income participants were also much less likely to have zero equity investments.

A significant fraction of participants, particularly younger ones, are heavily diversified into equities, while at the same time a large percentage of their peers hold zero equities in their accounts. The data indicate that the low earning younger participants may not appreciate the advantages of diversifying their 401(k) portfolio to include equities. This puts them at risk of accumulating insufficient assets to fund a desired

Table 3  
**ALLOCATION DISTRIBUTIONS OF PARTICIPANT ACCOUNT BALANCES, COMPANY A RETIREMENT SAVINGS PLAN, 1994**

	Nonequity Investments				Equity Investments				Company A Stock			
	Zero	<20%	20%–80%	80%+	Zero	<20%	20%–80%	80%+	Zero	<20%	20%–80%	80%+
Total	15.4%	12.8%	42.5%	29.3%	20.9%	13.5%	44.6%	21.1%	77.4%	11.8%	8.6%	2.1%
Age												
20–29	19.6	16.3	44.4	19.7	16.9	7.4	48.7	27.0	71.7	16.3	10.1	1.9
30–39	15.2	14.0	45.0	25.8	18.3	12.1	47.8	21.7	76.4	12.9	8.7	2.0
40–49	14.7	11.7	41.2	32.5	23.2	14.6	42.6	19.5	78.8	10.8	8.2	2.3
50–59	16.3	11.3	38.9	33.6	22.7	16.6	40.0	20.7	79.0	10.1	8.6	2.3
60 and over	14.2	9.1	32.3	44.4	33.1	16.0	32.0	18.9	86.2	5.7	6.2	1.9
Salary												
\$10,000–\$19,999	10.6	6.0	34.3	49.1	40.8	13.6	34.3	11.3	78.1	12.8	6.5	2.5
\$20,000–\$29,999	9.2	7.4	33.9	49.5	41.2	13.1	33.8	11.8	82.3	9.4	6.5	1.8
\$30,000–\$39,999	12.2	10.6	38.9	38.3	28.7	14.4	40.2	16.6	79.1	11.4	7.4	2.1
\$40,000–\$49,999	15.5	13.0	43.5	28.0	19.4	13.7	45.7	21.1	76.6	12.7	8.6	2.2
\$50,000–\$59,999	17.1	14.1	44.7	24.1	16.5	12.7	47.3	23.6	76.6	12.4	8.7	2.2
\$60,000–\$74,999	17.3	14.6	45.3	22.8	14.8	13.0	48.1	24.1	76.3	12.0	9.6	2.1
\$75,000–\$99,999	18.4	14.7	44.4	22.4	14.0	13.8	47.3	24.9	76.3	11.9	9.7	2.1
\$100,000 or more	19.9	14.2	44.2	21.6	14.2	13.3	47.2	25.3	76.0	11.2	10.3	2.5
Tenure												
2 years or less	24.0	10.4	28.0	37.6	39.0	4.1	33.9	23.1	73.3	11.1	13.2	2.5
2+ years–5 years	23.2	16.4	40.6	19.8	19.4	6.7	45.7	28.3	68.6	15.8	12.2	3.4
5+ years–10 years	18.2	15.0	46.1	20.7	16.2	9.3	49.7	24.9	74.3	14.3	9.3	2.1
10+ years–15 years	13.4	13.0	44.2	29.3	20.1	13.8	46.2	19.9	78.9	11.6	7.5	2.0
15+ years–25 years	13.5	11.8	41.7	33.0	22.5	15.6	43.1	18.9	79.2	10.9	8.0	1.9
Over 25 years	16.3	11.5	40.3	31.9	20.9	16.9	41.4	20.8	78.1	10.7	9.0	2.3
Gender												
Male	16.5	13.4	42.2	27.8	20.0	13.6	44.7	21.6	75.6	12.1	9.8	2.6
Female	12.7	11.2	43.1	32.9	22.9	13.1	44.3	19.6	82.1	11.2	5.6	1.1
Marital Status												
Single	15.3	12.7	42.3	29.7	22.1	12.1	44.6	21.3	77.9	12.3	7.9	2.0
Married	15.5	12.9	42.6	29.1	20.5	13.9	44.7	21.0	77.3	11.8	8.8	2.2
Unknown	12.4	9.4	36.6	41.6	30.6	15.4	36.6	17.5	82.1	9.7	6.7	1.6
Race												
White	15.7	12.9	42.6	28.8	20.2	13.5	44.8	21.4	77.9	11.6	8.5	2.1
Nonwhite	14.4	12.2	41.8	31.6	24.0	13.2	43.5	19.2	75.4	13.3	9.0	2.3

Source: Employee Benefit Research Institute.

retirement lifestyle or being of unable to retire when they desire.

**Twenty-nine percent of all participants had over 80 percent of their 401(k) portfolio invested in nonequity investments, and this percentage tended to increase as participant age increased** (table 3). Twenty percent of participants in their 20s hold over 80 percent in nonequities, compared with 44 percent of participants over age 60 who do so. Such patterns conform with the advice typically given by financial professionals regarding retirement investments, i.e., individuals approaching retirement age should readjust their portfolio to a more conservative mix of holdings.

**The fraction of participants holding over 80 percent of assets in nonequity investments also tended to rise as salary levels fell** (table 3). Forty-nine percent of those earning \$10,000–\$19,999 invested over 80 percent of their assets in nonequity funds,

compared with 22 percent of participants earning \$100,000 or more. This reinforces the equity holding findings previously discussed and the implication that lower earners tend to be less sophisticated, or specifically, more risk averse than their higher earning colleagues.

**Company Stock**—Company A stock accounts for 6 percent of 401(k) account balances on average (table 1). There is no variation of significant note in this average with any worker demographics. Over three-quarters of plan participants (77 percent) had none of their 401(k) assets invested in Company A stock (table 3). This percentage did tend to increase with participant age. Seventy-two percent of those in their 20s had no assets in company stock, compared with 79 percent of those in their 50s and 86 percent of those aged 60 and over. A similar, though weaker, relationship was ob-



served with tenure. There was no significant pattern of variation with salary.

## Company B

Company B's 401(k) plan had five investment options available to plan participants in 1994. Three were equity based: a multi-asset fund, an indexed equity fund, and a growth equity fund. Two were nonequity-based funds: a short-term bond fund and a fixed income fund. Data on the allocation of account

balances are not available, so this section analyzes the allocation of participant contributions in 1994.

**Average Allocations**—On average, 53 percent of participant contributions were allocated to the fixed income fund, and 3 percent were allocated to the short-term bond fund in 1994 (table 4). Twenty-two percent of participant contributions were, on average, allocated to the growth equity fund, 11 percent were allocated to the multi-asset fund, and the remaining 11 percent were allocated to the indexed equity fund. Therefore, on average, participants in the Company B 401(k) plan had close to a 50/50 split in allocating their contributions between equity and nonequity-based options.

There was a dramatic increase in the fraction of participant contributions allocated to

Table 4  
**AVERAGE ALLOCATIONS OF PARTICIPANT CONTRIBUTIONS,  
COMPANY B RETIREMENT SAVINGS PLAN, 1994**

	Fixed Income Fund	Short-Term Bond Fund	Multi-Asset Fund	Indexed Equity Fund	Growth Equity Fund
Total	52.6%	3.3%	11.4%	11.1%	21.5%
Age					
20–29	45.6	3.9	10.0	13.5	26.9
30–39	46.8	4.1	11.6	12.8	24.7
40–49	52.7	3.3	11.9	11.3	20.9
50–59	59.8	2.4	11.8	8.5	17.6
60 and over	79.7	1.1	7.9	4.0	7.3
Salary					
\$10,000–\$19,999	50.7	3.7	11.2	11.8	22.6
\$20,000–\$29,999	57.1	4.0	12.5	9.4	17.0
\$30,000–\$39,999	54.6	3.5	11.0	10.3	20.5
\$40,000–\$49,999	51.5	3.4	11.7	11.7	21.6
\$50,000–\$59,999	51.3	3.1	11.0	11.2	23.3
\$60,000–\$74,999	46.8	2.8	12.5	12.8	25.1
\$75,000–\$99,999	44.9	3.0	11.3	13.6	27.1
\$100,000 or more	54.1	1.4	8.5	12.4	23.7
Tenure					
2 years or less	34.4	3.7	11.9	14.8	35.2
2+ years–5 years	45.7	3.9	12.6	13.3	24.5
5+ years–10 years	51.3	3.3	11.5	12.2	21.7
10+ years–15 years	54.5	3.5	10.9	10.6	20.4
15+ years–25 years	59.9	3.0	11.3	8.8	17.0
Over 25 years	67.6	2.4	9.6	6.7	13.6
Gender					
Male	47.2	2.8	10.6	12.4	27.0
Female	56.4	3.7	12.0	10.2	17.6
Marital Status					
Single	52.4	3.7	10.4	11.7	21.8
Married	52.0	3.1	12.1	11.1	21.8
Unknown	63.6	2.8	11.5	7.6	14.5
Race					
White	50.3	3.1	12.0	11.8	22.8
Nonwhite	60.4	3.9	9.7	9.0	17.0

Source: Employee Benefit Research Institute.

the fixed income fund as participant age increased. Forty-six percent of contributions were allocated to the fixed income fund for participants in their 20s, compared with 80 percent for those aged 60 and over (table 4).

Allocations to the other nonequity fund did tend to drop with age, but this was dwarfed by the increased allocation to the fixed income fund. Such patterns are again consistent with the conventional wisdom of

matching asset allocations with time horizons and becoming more “conservative” as one approaches retirement age. Allocations to the growth equity fund and indexed equity fund experienced the corresponding decreases as participant age increased. Participants in their 20s allocated 27 percent of their contributions to the growth equity fund and 14 percent to the indexed equity fund. For workers aged 60 and over, these allocations were 7 percent and 4 percent, respectively (table 4).

While contribution allocations showed the same general patterns as tenure varied (table 4) as with balance allocations in Company A, there did appear to be an independent tenure effect for contribution allocations for Company B participants. As tenure increased, allocations to nonequity investments increased, and allocations to equity investments correspondingly decreased, and this pattern was observed

Table 5  
**ALLOCATION DISTRIBUTIONS OF PARTICIPANT CONTRIBUTIONS,  
COMPANY B RETIREMENT SAVINGS PLAN, BY PARTICIPANT AGE AND TENURE, 1994**

	Nonequity Investments			Equity Investments		
	5 years or less	5 to 10 years (tenure)	Over 10 years	5 years or less	5 to 10 years (tenure)	Over 10 years
Total	46.0%	54.6%	63.0%	54.0%	45.4%	37.0%
Age						
20–34	43.9	52.7	61.6	56.1	47.3	38.4
35–54	46.0	53.4	60.5	54.0	46.6	39.5
55–65	62.4	67.8	74.0	37.6	32.2	26.0

Source: Employee Benefit Research Institute.

within each age category (table 5).

There is no consistent pattern of changes in contribution allocations as salary levels change. For example, participants earning \$10,000–\$19,999 allocated 51 percent of contributions to the fixed income fund, and those earning \$100,000 or more allocated 54 percent to the same fund; the highest allocation to the fixed income fund was 57 percent for those earning \$20,000–\$29,999, while the lowest was 45 percent for those earning \$75,000–\$99,999 (table 4). A similar absence of variation with salary existed with the other four fund options, indicating that lower earning plan participants had just as much investment savvy as their higher earning peers when it came to investing their 401(k) contributions. However, mere analysis of allocation averages across demographic groupings may mask underlying variations in the distribution of contribution allocations and thus lead to faulty conclusions. The following section examines the distribution of participant contributions to the equity funds and nonequity funds and how these distributions vary across groups of participants.

**Allocation Distributions—Twenty-five percent of plan participants at Company B had none of their contributions allocated to any equity-based funds (table 6).** It is generally recognized that individuals with a relatively long investment horizon should diversify into equity investments because of their historically greater longer term performance (despite the greater volatility) and the need to outpace inflation when accumulating retirement assets. In this light, it is particularly noteworthy that 20 percent of participants in their 20s and 30s had none of their contributions allocated to the equity options. In addition, over 30 percent of participants earning \$10,000–\$29,999 (who tend to be younger) had no equity investments (table 6).

**On the other hand, 20 percent of all participants had over 80 percent of their contributions allocated to equity-based funds (table 6). Twenty-four percent of participants in their 20s and**

**22 percent of participants in the 30s had heavy equity investments (greater than 80 percent of contributions).** While 26 percent of participants earning \$10,000–\$19,999 were invested heavily in equities with their 401(k) contributions, only 15 percent of those earning \$20,000–\$29,999 were heavily invested in equities with their contributions. At the \$75,000–\$99,999 income level, 29 percent of plan participants had over 80 percent of their contributions invested in equities (this fell to 18 percent for those with incomes of \$100,000 or more). Higher income participants were also less likely to have zero equity investments.

As with the Company A account balance allocations, the Company B contribution allocations reveal that a significant fraction of participants, particularly younger ones, are heavily diversified into equities, while at the same time a large percentage of their peers hold zero equities in their accounts. Such patterns are masked by analyses that examine only average allocation percentages. **The Company B data thus support the hypothesis that it may be the low earning younger participants who do not appreciate the advantages of diversifying their 401(k) portfolios to include equities when investing for a retirement that is decades in the future.** Of course, to the extent that these young individuals anticipate the need for tapping this money in the not-to-distant future, for instance, for a home purchase, such conservative investment patterns may match well their investment horizons.

Thirty-two percent of all participants had over 80 percent of their 401(k) contributions invested in nonequity investments, and this percentage increased as participant age increased (table 6). Twenty-six percent of participants in their 20s invested over 80 percent of their contributions in nonequities, compared with 38 percent of participants in their 50s and 63 percent of those aged 60 and over. Again, this reflects rational investment behavior as individuals approaching retirement age

Table 6  
**ALLOCATION DISTRIBUTIONS OF PARTICIPANT CONTRIBUTIONS, COMPANY B RETIREMENT SAVINGS PLAN, 1994**

	Nonequity Investments				Equity Investments			
	Zero	<20%	20%–80%	80%+	Zero	<20%	20%–80%	80%+
Total	12.3%	8.6%	47.4%	31.7%	25.4%	7.1%	47.8%	19.7%
Age								
20–29	15.2	11.2	47.9	25.7	19.8	7.4	48.5	24.3
30–39	13.0	10.6	50.7	25.6	20.0	6.5	51.5	22.0
40–49	12.3	9.0	47.1	31.6	24.9	7.5	47.5	20.2
50–59	11.6	5.0	45.5	38.0	31.7	6.7	45.5	16.1
60 and over	4.8	0.5	31.4	63.3	55.2	8.1	31.4	5.2
Salary								
\$10,000–\$19,999	18.1	8.1	40.0	33.7	30.4	4.1	39.6	25.9
\$20,000–\$29,999	10.9	5.6	46.4	37.2	32.2	6.1	46.5	15.2
\$30,000–\$39,999	11.1	8.1	46.5	34.3	27.7	7.8	46.1	18.4
\$40,000–\$49,999	13.5	9.9	46.7	29.9	22.9	7.8	47.6	21.7
\$50,000–\$59,999	11.7	8.0	51.0	29.3	22.0	7.6	51.5	18.8
\$60,000–\$74,999	15.4	9.7	51.5	23.4	17.5	6.4	52.8	23.2
\$75,000–\$99,999	15.1	15.4	44.5	25.0	18.0	7.4	46.0	28.7
\$100,000 or more	7.8	10.8	50.0	31.5	23.4	8.1	51.1	17.5
Tenure								
2 years or less	27.4	12.8	40.9	18.9	16.1	3.0	41.5	39.3
2+ years–5 years	16.8	10.6	46.2	26.4	21.1	6.3	47.1	25.5
5+ years–10 years	11.0	9.0	50.2	29.8	23.9	6.8	50.6	18.6
10+ years–15 years	9.2	8.5	50.0	32.3	24.8	8.4	50.4	16.4
15+ years–25 years	7.8	6.4	49.2	36.6	28.4	8.7	49.4	13.4
Over 25 years	7.2	4.8	41.1	46.9	40.5	7.2	40.9	11.4
Gender								
Male	15.9	11.3	45.6	27.2	21.7	6.0	46.9	25.4
Female	9.9	6.7	48.6	34.8	28.1	7.8	48.4	15.7
Marital Status								
Single	11.5	8.8	47.6	32.2	25.5	7.8	47.6	19.2
Married	13.0	8.9	47.4	30.7	24.9	6.5	48.1	20.5
Unknown	10.3	3.8	45.1	40.8	32.4	9.4	44.6	13.6
Race								
White	13.9	9.2	47.7	29.2	23.7	6.3	48.3	21.7
Nonwhite	7.2	6.6	46.2	40.0	31.1	9.7	46.0	13.2

Source: Employee Benefit Research Institute.

readjust their portfolios to a more conservative mix of holdings.

**The fraction of participants holding over 80 percent of assets in nonequity investments also generally rose as salary levels fell** (table 6). Thirty-seven percent of those earning \$20,000–\$29,999 invested over 80 percent of their assets in nonequity funds, compared with about one-quarter of participants earning \$60,000–\$99,999. This reinforces the equity holding findings previously discussed and the implication that lower earners tend to be less sophisticated, or specifically, more risk averse than their higher earning colleagues.

## Company C

Company C's 401(k) plan for management employees had 10 investment options available to plan participants

in 1994. Four were equity based (including one international securities fund). Three were balanced funds reflecting aggressive, moderate, and conservative interest strategies, respectively. Two were nonequity-based funds: a money market fund and a fixed income fund. There was also a Company C stock fund. The participant chose how to invest employer matching contributions as well as employee contributions.

**Average Allocations—The average account balance allocation in the Company C 401(k) plan in 1994 was 42 percent in the Company C stock, 23 percent in the equity funds, 26 percent in the bond funds, 8 percent in the balanced funds, and less than 1 percent in the money market fund** (table 7).

**Older participants tended, on average, to have less of their account balances allocated to the equity options. This applies to the Company C**

**stock (after age 40) as well as the equity funds and the balanced funds** (table 7). On average, older workers held a much larger fraction of their account portfolio in the fixed income fund than younger workers. Participants in their 20s held 18 percent of their assets in the fixed income fund on average, compared with 38 percent of participants aged 60 and over (table 7).

The same general patterns were observed as tenure varied, with the exception that longer tenured workers did not allocate a smaller percentage of their assets to Company C stock compared with short tenure workers (table 7).

**However, tenure would appear to have had an effect independent of the effect of age. Longer tenured workers tended to invest a smaller fraction of their 401(k) portfolio in equity funds, and this effect remained, controlling for age** (table 2). In addition, longer tenured workers allocated a larger share of their account balances to the nonequity options, and again this effect occurred within differing age groups.

**Average balance allocations to the Company C stock increased with salary levels for participants earning less than \$60,000 annually** (table 7). The percentages decreased rapidly after this point, falling from 45 percent for those earning \$50,000–\$59,999 to only 31 percent for those earning \$100,000 or more. Two factors may influence this result. As discussed previously, these findings may indicate that higher earners tend to be more sophisticated and in this regard may have a better appreciation of the benefits of diversification. Another very likely possibility is that the higher paid employees will more likely be able to acquire stock options offered by the employer.

Whatever the reason for the lower asset allocations in Company C stock for higher paid employees, it would appear that they treat the employer's securities as a substitute for diversified equity funds instead of a relatively safe nonequity investment. The 14 percentage point decrease in employer securities is translated into a 10 percentage point increase in equity funds and only a

Table 7  
**AVERAGE ALLOCATIONS OF PARTICIPANT ACCOUNT BALANCES,  
COMPANY C RETIREMENT SAVINGS PLAN, 1994**

	Employer Stock	Equity Funds	Bond Fund	Money Market Fund	Balanced Fund
Total	42.2%	22.6%	26.1%	0.7%	8.4%
Age					
20–29	41.2	29.6	17.8	0.4	10.8
30–39	40.8	24.2	25.0	0.6	9.2
40–49	43.8	20.6	26.9	0.6	7.9
50–59	42.0	20.3	29.6	0.8	7.1
60 and over	35.6	19.0	38.2	1.1	5.9
Salary					
\$10,000–\$19,999	38.8	26.6	15.2	1.2	18.2
\$20,000–\$29,999	41.5	25.5	21.6	0.7	10.5
\$30,000–\$39,999	42.6	18.8	30.0	0.4	7.9
\$40,000–\$49,999	44.0	20.0	27.8	0.4	7.5
\$50,000–\$59,999	45.2	20.2	26.0	0.5	7.8
\$60,000–\$74,999	42.6	23.1	24.9	0.7	8.5
\$75,000–\$99,999	38.4	26.2	25.3	0.9	9.0
\$100,000 or more	30.8	30.2	28.3	0.9	9.5
Tenure					
2 years or less	38.5	34.5	10.7	0.8	15.3
2+ years–5 years	41.4	31.4	16.6	0.5	9.9
5+ years–10 years	39.7	25.1	25.5	0.6	8.8
10+ years–15 years	40.6	21.6	28.4	0.7	8.5
15+ years–25 years	44.6	19.2	27.7	0.6	7.7
Over 25 years	43.9	19.6	28.7	0.7	6.9
Gender					
Male	43.2	22.7	25.1	0.7	8.1
Female	40.3	22.3	27.8	0.6	8.8
Race					
White	41.9	22.6	25.9	0.6	8.7
Nonwhite	43.5	21.9	27	0.5	6.9

Source: Employee Benefit Research Institute.

2 percentage point increase in both balanced funds and bond funds.

**Allocation Distributions—Thirty-seven percent of plan participants at Company C had none of their account balance invested in any equity-based funds (this does not include the Company C stock fund) (table 8). More than one-fourth of the employees in each age category had a zero balance for the equity funds, ranging from 28 percent for employees in their 20s to 42 percent for those over age 60. However, this did not necessarily result in an exceedingly conservative asset allocation.** Only 6 percent of the employees in their 20s invested more than 80 percent of their account balances in nonequity options (bond fund and money market fund). This percentage increased with age but reached a maximum value of only 19 percent for those aged 60 and over.

Similar results were found when tenure was investigated (table 8). Only 21 percent of the employees hired within the last two years had a zero account

Table 8  
**ALLOCATION DISTRIBUTIONS OF PARTICIPANT ACCOUNT BALANCES, COMPANY C RETIREMENT SAVINGS PLAN, 1994**

	Equities				Nonequities				Employer Stock			
	Zero	<20%	20%–80%	80%+	Zero	<20%	20%–80%	80%+	Zero	<20%	20%–80%	80%+
Total	37.0%	11.3%	41.6%	10.1%	45.0%	11.4%	31.9%	11.6%	19.9%	10.4%	49.8%	19.9%
Age												
20–29	28.1	6.8	51.2	13.8	57.2	10.7	25.9	6.2	17.2	9.2	57.2	16.4
30–39	34.0	10.7	44.7	10.7	44.8	12.4	32.5	10.3	18.7	10.8	53.2	17.3
40–49	40.2	11.7	38.7	9.4	44.4	11.6	31.4	12.5	20.2	9.8	48.0	22.0
50–59	39.4	13.6	38.0	9.0	41.8	9.8	34.1	14.2	22.6	11.0	44.6	21.8
60 and over	41.6	15.3	34.5	8.6	32.1	8.2	40.4	19.2	28.8	13.8	40.7	16.7
Salary												
\$10,000–\$19,999	29.3	6.5	39.9	24.3	61.6	10.5	22.3	5.6	23.6	11.4	48.4	16.6
\$20,000–\$29,999	39.1	5.2	39.8	15.9	56.5	7.7	25.0	10.9	23.2	9.7	47.2	19.9
\$30,000–\$39,999	47.3	8.7	34.0	9.9	45.0	8.6	30.3	16.1	23.2	8.6	46.9	21.3
\$40,000–\$49,999	44.4	9.8	36.8	9.0	45.7	9.6	31.2	13.5	20.4	8.4	49.3	21.9
\$50,000–\$59,999	41.6	11.5	37.9	9.0	46.0	11.0	31.0	11.9	18.4	9.3	49.6	22.7
\$60,000–\$74,999	34.1	12.5	43.6	9.8	45.2	12.4	31.7	10.6	18.3	10.9	51.1	19.7
\$75,000–\$99,999	28.1	12.3	48.4	11.2	42.6	13.3	34.0	10.0	20.3	12.4	51.4	15.9
\$100,000 or more	21.0	11.7	54.3	13.0	37.3	13.4	38.8	10.4	27.9	14.9	46.2	11.0
Tenure												
2 years or less	21.3	2.6	54.2	21.9	71.7	6.3	18.8	3.2	22.1	8.8	53.2	15.9
2+ years–5 years	26.4	6.6	53.1	13.9	59.1	10.4	25.2	5.3	18.1	7.8	56.5	17.6
5+ years–10 years	33.2	10.2	45.6	10.9	43.7	12.7	33.3	10.3	19.3	10.9	53.8	16.0
10+ years–15 years	36.2	12.7	41.9	9.2	40.1	12.2	35.3	12.3	19.2	11.5	52.0	17.3
15+ years–25 years	42.2	12.3	37.1	8.4	43.2	11.9	31.6	13.3	19.5	10.2	47.4	22.9
Over 25 years	41.7	13.0	36.3	8.9	43.7	10.0	32.3	14.0	22.4	10.1	43.3	24.2
Gender												
Male	37.3	11.3	41.2	10.2	47.1	11.1	30.5	11.3	20.2	10.1	47.9	21.8
Female	36.5	11.2	42.3	10.0	41.5	11.9	34.3	12.1	19.5	10.8	53.2	16.5
Race												
White	36.4	11.4	41.7	10.6	45.5	11.4	31.5	11.6	20.4	10.5	49.1	20.0
Nonwhite	39.7	10.8	41.3	8.2	42.8	11.8	33.7	11.6	17.7	9.6	53.1	19.6

Source: Employee Benefit Research Institute.

balance for the diversified equity funds; however, this percentage increased to 42 percent for those with at least 15 years of service.

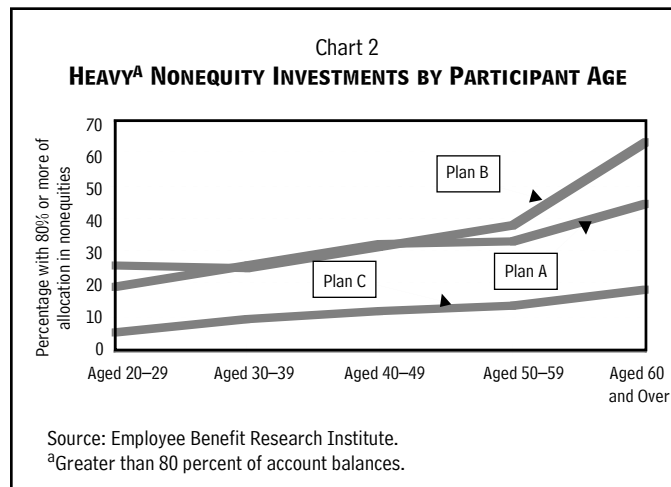
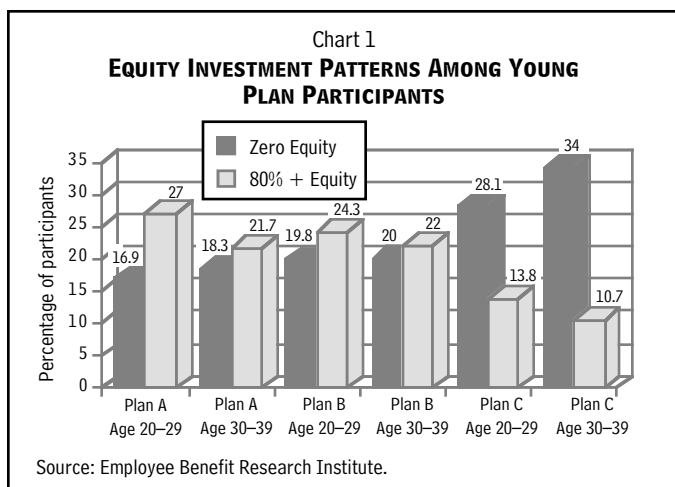
**Excluding those earning less than \$30,000, there is also a strong negative relationship between salary and the likelihood that the employee invests in a diversified equity fund. Nearly one-half (47 percent) of those earning \$30,000–\$39,999 had a zero account balance for the diversified equity funds, while only slightly more than one-fifth (21 percent) of those earning more than \$100,000 currently had no investments in a diversified equity fund.**

*Company Stock*—Approximately one-fifth of plan participants had none of their 401(k) assets invested in Company C stock (table 8). This percentage did tend to increase with participant age, and 29 percent of the employees aged 60 and over had no employer securities in their 401(k) portfolio (we have no data to speculate on their personal holdings, including any stock options).

There was also a significant increase in the percentage of employees with no Company C stock holdings as salaries increased above \$60,000.

## Implications

From a business and public policy perspective, these findings highlight real differences in allocation behavior among workers within similar demographic groups. Situations occur within a plan where a sizable fraction of participants has no equity allocations and simultaneously another fraction has very heavy equity allocations. This is particularly noteworthy among younger participants, a group whom financial professionals would typically advise to diversify a healthy share of their 401(k) funds into equity investments. Chart 1 shows that in all three plans there is a sizable fraction of



younger participants (aged 20–29 and aged 30–39) with zero equity investments (ranging from 17 percent to 34 percent). At the same time, in plan A and plan B there are even larger fractions of workers in these same age groups who invested heavily in equities (more than 80 percent of account balances or employee contributions, respectively).

Apparently some workers appreciate the advantages of diversifying investments for long-term retirement saving and other workers do not. Those who do not are at risk of accumulating insufficient assets to fund a retirement lifestyle they desire or of being unable to retire when they desire. Of course, to the extent that these young individuals anticipate the need for tapping this money in the not-to-distant future, for instance, for a home purchase, such conservative investment patterns may match well their investment horizon.

**At the same time, there is evidence within these plans of workers matching their investment patterns with their time horizons in a textbook manner, e.g., older workers having larger allocations devoted to nonequity investments than their younger colleagues.** Chart 2 shows that in the three plans analyzed, the percentage of participants with more than 80 percent of their account balances invested in nonequity-based options increased consistently with participant age.

A financial planner would therefore look at these data and find both positives and negatives in terms of the decisions that the plan participants are making with their 401(k) investments. Of course, it must be kept in mind that, while the data analyzed here are very rich, they do not include information on the financial holdings of these individuals outside their 401(k) plan. In addition, all three plan sponsors offer defined benefit plans in addition to the 401(k) plans.

**These findings make clear the need to focus**

**on the distribution of allocations and not merely on averages when discussing asset allocation. Averages mask crucial information for plan design and policymaking. For example, in this analysis, examining averages would show greater nonequity investments among older participants, but it would mask the occurrence of both zero and heavy equity investments among young participants.**

## Conclusion

This report will assist employers, individuals, and policymakers as they contemplate the future balance of

defined benefit and defined contribution plans; the potential role of defined contribution accounts in Social Security; the amount of investment flexibility given to individuals in defined contribution accounts; and the prospects for retirement ages and incomes as we enter the 21st century.

Are individuals investing their 401(k) retirement money in a way that “makes sense?” In the three large plans analyzed in this report (plans with relatively sophisticated educational programs), there is evidence of workers matching their investment patterns with their time horizons in a textbook manner, e.g., older workers having larger allocations devoted to nonequity investments than their younger colleagues. At the same time, however, these findings highlight a real dichotomy in allocation behavior among workers within similar demographic groups. Specifically, we have observed situations within these plans where there is a sizable fraction of participants, and in particular young participants, with no equity allocations and simultaneously another fraction with very heavy equity allocations.

This *Issue Brief* was written by Paul Yakoboski and Jack VanDerhei of EBRI, with assistance from the Institute's research and editorial staffs. Any views expressed in this article are those of the authors and should not be ascribed to the officers, trustees, members, or other sponsors of EBRI, EBRI-ERF, or their staffs. Neither EBRI nor EBRI-ERF lobbies or takes positions on specific policy proposals.

Apparently some workers get it and some workers do not when it comes to the advantages of diversifying investments for long-term retirement saving. While such behavior could be the result of a lack of basic investment sophistication, it may also be explained, at least in some cases, by young individuals anticipating the need to tap this money in the not-to-distant future, for instance, for a home purchase. The signals regarding the "quality" of worker 401(k) investment decisions are mixed.

Perhaps the most significant findings of this analysis deal with the degree of asset diversification for the various age cohorts. Neither Company A nor C (the only two with account balance, as opposed to current contribution, information) have a majority of assets allocated to nonequity investments (fixed income, bond, and money market funds) for any group under age 60. However, this masks the fact that, even at the young ages, a significant percentage of employees are investing almost exclusively in nonequity investments. The proportion of participants under age 60 with more than 80 percent of their account balances in nonequity investments ranges from 6 percent to 14 percent at Company C and 20 percent to 34 percent at Company A.

One of the primary reasons for the smaller nonequity concentrations at Company C is the larger concentration in employer securities. It would appear that participants of the Company C plan are much more likely to view this asset class as a substitute for a diversified equity portfolio. The extent to which this is common among sponsors offering employer securities as a 401(k) investment option and the implications of extrapolating observed asset allocations in such plans to situations in which this option is not available (e.g., some of the Social Security reform proposals) will be analyzed in a forthcoming *Issue Brief* that includes information on over 1,300 individual account plans.

## Bibliography

Employee Benefit Research Institute. *When Workers Call The Shots: Can They Achieve Retirement Income*

*Security?* Washington, DC: Employee Benefit Research Institute, 1995.

Goodfellow, Gordon P., and Sylvester J. Schieber.

"Investment of Assets in Self-Directed Retirement Plans." In Olivia S. Mitchell, ed., *Positioning Pensions for the Twenty First Century*. Philadelphia PA: University of Pennsylvania Press for the Pension Research Council, forthcoming.

Milne, Deborah, Jack VanDerhei, and Paul Yakoboski.

"Participant Education: Actions and Outcomes." *EBRI Issue Brief* no. 169 (Employee Benefit Research Institute, January 1996).

\_\_\_\_\_. "Participant Education in Defined Contribution Plans." *EBRI Issue Brief* no. 160 (Employee Benefit Research Institute, April 1995).

Yakoboski, Paul. "Are Workers Kidding Themselves? Results of the 1995 Retirement Confidence Survey."

*EBRI Issue Brief* no. 168 (Employee Benefit Research Institute, December 1995).

Yakoboski, Paul, and Jack VanDerhei. "Contribution Rates and Plan Features: An Analysis of Large 401(k) Plan Data." *EBRI Issue Brief* no. 174 (Employee Benefit Research Institute, June 1996).

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# Issue Brief

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