

# **International Models for Pension Reform**

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## **International Models for Pension Reform**

The share of the world's population over age 60 will triple between 1990 and 2030. By that date, more than 30% of the developed world's people will be older than age 60. This massive demographic shift will challenge public and private pension systems the world over. The reality is that many of the large unfunded public social security programs that evolved after World War II face threats of financial insolvency.<sup>1</sup> Can funded pension plans perform effectively as an alternative model for national retirement systems? In these remarks, I explore recent international developments in pension plan type, examine issues pertinent to pension investments, and evaluate the global trend toward social security privatization. The goal of the discussion is to assess how these new pension models will respond to the demographic, political, and financial challenges of the next century.<sup>2</sup>

### **The US Perspective: Defined Contribution Pensions Increasingly Popular**

In the United States, retiring workers depend on three sources of wealth for their old-age consumption: private savings, company-provided pensions, and government-funded old-age benefits from the Social Security system. Wealth holdings for a representative sample of Americans on the verge of retirement appear in Table 1.<sup>3</sup>

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<sup>1</sup> See Bodie, Mitchell and Turner (1996), and Fields and Mitchell (1993).

<sup>2</sup> In this discussion I draw on my published and unpublished research including Mitchell (1998 and 1997d) and other items listed in the references.

<sup>3</sup> This is the Health and Retirement Study (HRS), covering people age 51-61 and their spouses of any age, first surveyed in 1992 and reinterviewed every two years thereafter. This project is described at [www.umich.edu/~hrswww/](http://www.umich.edu/~hrswww/)

The data show that the median household whose head is in his mid-50's commands about US\$325,000 in total assets, a sum projected to grow to \$380,000 by the time the household head attains age 62. Of this total, about two-fifths is attributable to expected future retirement payments from the government Social Security system. Approximately one-fifth each is represented by housing wealth, other financial assets, and the company-sponsored pension.

The importance of company pension plans has grown over time. In the US, employers may voluntarily offer a pension if deemed useful for human resource objectives; it should be noted that providing a pension is not mandatory.<sup>4</sup> Most pensions paying benefits today were established in the 1940's and 1950's, and pensions now cover approximately half of all people working in the private sector (coverage in the public sector is much higher). It is estimated that about half of all workers will receive a pension benefit from an employer plan when they retire.

Deciding to supply a pension plan is voluntary, as is the choice over plan type and the level of benefits or contributions (depending on the plan type). A company that does issue a pension promise is subject to extensively fiduciary legislation and government oversight to ensure that contributions are made in a regular manner, and that promised benefits are delivered. Key among these legislative requirements is the Employee Retirement Income Security Act (ERISA) of 1974,

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<sup>4</sup> For a discussion of factors influencing the demand for and supply of pensions see Gustman, Mitchell and Steinmeier (1994).

requiring a defined benefit pension to pre-fund its promises with assets held in trust for the participant. In a conventional defined benefit plan, the employer specifies that he will pay the retiree a life annuity that depends on the worker's pre-retirement pay and years of service. Pre-funding therefore requires computing the present value of future benefits and depositing assets into a segregated account to secure it. Workers having a defined benefit promise are also covered by a government-run pension insurance agency called the Pension Benefit Guarantee Corporation (PBGC), an institution that secures defined benefit promises, should the sponsoring corporation default by virtue of bankruptcy.

Defined contribution pensions are not covered by this form of government insurance in the US. This second plan type includes the very popular 401(k) plans, are of more recent vintage. In these plans, a sponsoring company makes available to workers an investment-type account into which employees may elect to contribute if they should choose. Typically employers will match up to a fraction of employee's deferred pay, thus boosting employee incentives to join the plan.

An overview of the US pension environment is provided in Table 2. This shows that defined benefit pensions are fewer in number than defined contribution plans, but they control about half the total participant and asset pool.<sup>5</sup> This picture is far from static, since major changes have occurred in the pension environment in the past

several decades. For example Figure 1 reveals that asset holdings in both pension types have grown substantially, but the rate of expansion has been much faster for defined contribution than for defined benefit plans. Likewise, the rate of growth in participants for defined contribution plans has far exceeded that of defined benefit plans. In other words, though defined benefit plans remain major players in the US retirement security arena, the greatest growth has been, and is likely to continue to be, in the defined contribution side of the market.

Many have sought to explain why defined contribution pensions have grown so fast, while virtually no new defined benefit plans are being initiated of late. One explanation has to do with rising expenses required to mount a defined benefit plan, illustrated in Table 3. Many of these costs are administrative in nature due to record-keeping requirements, reporting and disclosure to the government, actuarial fees associated with funding computations, and the expenses associated with the mandatory pension insurance. For a small plan, this per-participant cost is quite substantial, at approximately \$850 per year per employee (money management costs are not included in these calculations). Scale economies are important, so that a larger company with at least 10,000 employees faces a per-participant cost of only about \$60 per year. The cost disadvantage of defined benefit plans in the US relative to defined contribution pensions is also important and the effect differs with firm size. Thus a small company would pay 116% more per year in administrative

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<sup>5</sup> For more discussion of private pensions see Gordon, Mitchell and Twinney (1997). The figures on private pensions do not include public sector pension plans, which have approximately 16 million

costs if it offered a defined benefit versus a defined contribution pension, and a large employer would pay 39% more per year. Clearly cost differentials can explain some of the trend favoring defined contribution pensions over time.

Another reason that defined contribution pension are growing is that both employers and employees like them. These plans afford participants the opportunity to select how much to invest in their pension (up to a legal limit) and how they will manage their own investments within the plan. By law, the 401(k) participant must have a choice of at least three funds to choose from (a stock index fund, a bond fund, and usually a money market); additional options are becoming the norm as money managers offer alliances with fund families and a wide range of institutional investors. For example in my university pension plan I have more than 30 funds across which I can allocate my pension dollars. Employees who decide to invest in their pension plans are often “rewarded” for participation with an employer match for some of their contributions, anywhere from 20 to 100%. Since the employer match vests only after 5 years, this tends to reward longer-staying employees. A typical sum invested into a 401(k) plan is currently about 6% of pay, and about half of all offering companies match employee contributions at some level. Participation rates have risen quite dramatically in the last decade, with over 75% of all eligible workers contributing something to their plans.

Several public policy questions loom large on the pension horizon in the US, some specific to the 401(k) environment, while others are more general. One issue is that pension participants have increasingly been given access to their funds prior to retirement, raising the question of whether this will erode eventual retirement benefits. For instance, 401(k) pensions typically offer loans in the event of hardship, and lump-sum cash-outs are paid to people leaving the sponsoring firm. Evidence suggests that most young people receiving a few thousand dollars do tend to spend rather than roll the money into another tax-protected pension account. A related issue is that many defined benefit plans now allow vested workers to take a lump-sum if they leave prior to retirement, a development that raises a similar policy question.

A different policy concern is whether enough money is being put into pension accounts in the first place. Combined employee/employer contribution rates of 6% of pay in 401(k) plans – to a limit of under \$10,000 per year – cannot generate a very large eventual retirement benefit, as compared to the old defined benefit pension system where double that amount tended to be deposited by sponsoring employers. Of course many of those who have 401(k) plans today would not have had any pension if the defined benefit plan were the only model available. Therefore, for this group, retirement saving is raised as a result of this new plan type. In any event, there is concern that people have focused too little on retirement saving needs in the

US, and they are rarely aware of the implications of saving shortfalls for their retirement wellbeing.

A further issue has to do with the way in which pension systems are designed and governed, especially those defined benefit plans created by state and local governments to provide retirement benefits to teachers, uniformed officers, and other civil servants.<sup>6</sup> These public pensions are managed differently than are private plans, mainly because corporate pensions must meet fiduciary standards codified in the Employee Retirement Income Security Act (ERISA), whereas public plans are subject to less stringent and less uniform regulation. As a result, public plan governance has been subject to political pressure influencing funding decisions and the choice of actuarial assumptions. In particular, liability measures are often sensitive to local fiscal stress, and investments are frequently subject to non-financial criteria. Also political appointees and *ex officio* board members tend to dominate decision-making, frequently with many public pension directors chosen to represent the interests of plan participants. Perhaps because of this different governance structure, public pension plans often direct their investments toward “in-state” projects, a practice associated with diminished rates of investment return. In general, though, public sector pensions in the US are relatively well funded, partly because their asset allocations have changed dramatically over time: currently over 40% of public plan assets are held in stock, up from 3% in 1960.

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<sup>6</sup> See Mitchell and Carr (1997); Hsin and Mitchell (1994 and 1997); Mitchell and Hsin (1994 and 1997).

A final area just beginning to engage public discussion concerns the payout or decumulation phase of the pension system. This has to do with retirement annuities – insurance products that offer protection against the risk that someone could outlive his saving. These annuities are of utmost importance for older people considering how to draw down their assets over the retirement period. The problem in the US is that retirees are increasingly offered the chance to access their entire pension amount rather than being required to annuitize their benefits. This breakdown in the annuity market may produce increasing adverse selection, a development that should be carefully monitored (Mitchell, Poterba, and Warshawsky 1997).

### **Issues Regarding Pension Investment and Fiduciary Responsibility**

Today's workers – tomorrow's retirees – clearly expect pensions to play a central role in their retirement wellbeing. Whether reality will meet expectations depends in large part on how well the pension funds are invested. It is for this reason that policymakers have turned their attention to issues regarding pension investment performance and matters of fiduciary responsibility.

These issues are perhaps clearest in the case of defined benefit pensions, since in the US, corporate plan assets are managed by pension trustees rather than by workers themselves. Private pension trustees are financial fiduciaries, and under

ERISA they must act as “prudent investors” – managing the monies in plan participants’ best interests. Though ERISA was legislated almost twenty-five years ago, interpreting its so-called prudent man rule remains controversial – particularly since trustees are held personally liable for investments found to be in conflict with the principle. In practice this debate translates into analysis of the most appropriate benchmarks for evaluating investment performance in a defined benefit environment. Those who argue for efficient capital markets suggest that pension money managers should not try to beat the market, but rather should invest passively with indexed portfolios and low levels of annual turnover. Opponents point out that research and analysis pays off for less liquid holdings such as real estate and global investment opportunities. In any event, defined benefit plans have substantially altered their investment holdings over time: equity investments have grown from 45% of the portfolio to 57%, and bonds grew from 27 to 33% (cash and real estate fractions diminished; see Table 5). Interest in international holdings has also grown in the last half-dozen years, with non-US stock now at around 10% of the private plan portfolio.

The defined contribution market is, however, not immune to all stress. One thing policymakers worry about is American workers’ financial illiteracy, particularly given the fact that these workers are being asked to make sophisticated investment decisions regarding their own pension holdings. A discouraging finding is that Americans tend to rely far too often on unsophisticated sources for financial advice

– friends and relatives – and lack a basic understanding of stock-market risk, bond prices and returns, and simple compound interest. More positively, however, defined contribution participants have dramatically altered their asset allocations in the last decade, moving increasingly into equities and away from guaranteed insurance contracts (GICs; see Table 4). This is particularly true of younger workers who invest 70-80% of their 401(k) portfolios in equities, a strategy in keeping with advice often offered by financial planners (Mitchell and Moore 1997). Also employers offering defined contribution pensions have found that offering their workers educational courses regarding financial preparedness for retirement raises the likelihood that workers will join in the plan, and may influence their asset allocation decisions (Mitchell and Scheiber, forthcoming). This in turn raises another concern, however, since parties offering financial advice in the US can be subject to legal suits should the investments turn sour. An important case on this point is currently wending its way through the court system, where 401(k) participants allege that their employer, a major computer systems manufacturer, offered an investment option that later proved to be worth less than anticipated. This case challenges many corporations' assumptions that giving workers investment options freed the sponsor from capital market risk in a defined contribution pension.

Related to the topic of pension plan performance is the issue of plan efficiency, a topic but little studied to date. My research has found that public sector pension

plans operate at only 65% of potential efficiency, mainly because of the many small funds that fail to take advantage of scale economies.<sup>7</sup> Private sector defined contribution plans in the United States are also asking how to invest more cost-effectively, and expense ratios are coming under ever-closer scrutiny. Variation in administrative costs such as is depicted in Table 5 translates into different net returns to investors, and as a result, there is increasing market pressure to reduce fees. A unique example is provided by the nation's largest pension system, the College Retirement Equity Fund (CREF), a plan that covers university staff and faculty. While that pension plan has several unique attributes – for instance it receives special treatment under tax and insurance regulation – its cost structure is among the lowest found in my recent review of pension costs (Table 6). As a result, some hail this national defined contribution structure as an example to replicate in other industrial sectors.

### **Global Change in Pensions: Social Security Privatization**

The US Old-age, Survivors, and Disability (OASDI) program – which pays social security old-age benefits – faces an unfunded obligation of approximately \$9 trillion. Filling this gap will require a benefit cut of about 25%, or a tax increase of approximately the same measure (Quinn and Mitchell 1996). Either option would have a serious impact on worker and retiree wellbeing, since even with current promised benefit amounts, we estimate that the median older household faces a saving shortfall of 16% per year (Moore and Mitchell 1997). This represents the

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<sup>7</sup> Evidence on this point appears in Hsin and Mitchell (1997), and Mitchell and Hsin (1997 a and b).

additional saving needed above “automatic” asset appreciation, pension growth, and social security benefit increases. Since currently promised benefits cannot actually be paid without substantial tax increases, we believe that the projected shortfall potentially seriously understated.

As an alternative to raising taxes or cutting benefits, some have proposed a more fundamental reform of the social security system – akin to that adopted by Chile in 1981. What Chile did was take the dramatic step of restructuring its national social security system, rejecting the old publicly-managed, deficit ridden, defined-benefit pension system, and adopting instead a mostly privately-managed defined-contribution pension design. Its two-pillar model provides (1) a minimum pension for retired workers, and (2) participation in mandatory defined contribution plans managed by licensed private pension managers called AFPs (Asociacion de Fondos de Pensiones). The individual account plans are paid for from a mandatory payroll tax set at 10% of pay (an additional 3% is charged for health and survivors insurance, and administrative costs).

As an overall assessment, many would agree that the Chilean economy and its pension system are in good economic shape today. Pension privatization has been judged a success, since the total fund now amounts to about \$40B and real returns have been substantial (about 12% real per year) over the last decade and a half. On the other hand, critics argue that the Chilean program is inefficient – tax collection

costs are high and half of all participants switch from one fund to the next annually. In addition the money managers have not diversified their holdings internationally, raising questions about the system's vulnerability to domestic market shocks.

In the last decade several sister countries in the Latin American region have adopted variants on the Chilean model (see Table 7).<sup>8</sup> Argentina's reform differs from Chile's in that the former country maintained a large public pension benefit, while also offering workers a one-time option to move part of their payroll taxes to a funded defined contribution account. Currently, the Argentine pension accumulations are beginning to mount up, and early evidence suggests that the majority of the eligible workforce is participating in the private accounts. Administrative costs in Argentina are somewhat below those experienced in Chile, partly because the Argentine approach employs the government tax collection authority to collect funds. Peru also implemented a private pension system, with the difference that Peruvian workers have the option to continue to switch between the new and the old system forever. This will entail long-term duplication of administrative costs as well as possible "gaming" of the minimum benefit via optional contributions to each system through time. A recent entrant to this arena is Mexico, where a plan to mandate individual private pension accounts was launched in late 1997, and somewhat unexpectedly, 10.5 million of 11 million eligible workers signed up. Like Chile and all the other countries adopting the

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<sup>8</sup> A discussion of the various Latin American reforms appears in Mitchell (1996b, 1997 a, b, and c), and Mitchell and Barreto (forthcoming).

mandatory defined contribution structure, the government continues to guarantee a minimum retirement benefit to any worker whose pension fund is too small at retirement.

Lest it be thought that the Chilean model is appealing only “south of the border”, we note that the idea of a mandated, individual, defined contribution pension is receiving serious study in the US as well. President Clinton’s Social Security Advisory Council recently proposed three options for old-age benefit reform, two of which had elements of an individual-account plan.<sup>9</sup> Other influential groups including the National Academy of Social Insurance and the Pension Research Council have major studies on social security reform underway, including research on the possible consequences of privatization in large nations with well-developed capital markets. Many of the former Soviet nations are actively discussing this approach or have already adopted it, and even China has shown some interest. It seems fair to conclude that the defined contribution pension model has caught the world’s imagination during this last decade of the 1990’s.

### **Looking Ahead**

This is a time of substantial change and opportunity in the global retirement plan arena, as economic and demographic challenges are met with new types of pensions intended to help people enhance their retirement security. Three factors promise to

influence retirement wealth accumulation and decumulation patterns in the future. First, the movement away from defined benefit toward defined contribution plans will continue, making job change and pension portability easier, but also placing more responsibility on workers' shoulders for retirement saving. Second, greater attention will have to be devoted to understanding the expenses associated with different plan designs, and to implementing cost-cutting and efficiency measures. Third, social security reforms will be required to force solvency on government benefit programs currently facing imbalance. All of these developments imply that individuals and their families will have to learn to save more, if they are to meet retirement consumption targets.

The move to defined contribution pensions offers much promise and some risk. In my view, the most important positive effect of the mandatory defined contribution model is that it reduces political risk. Specifically, many people of working age today do not believe that they will receive benefits from their soon-to-be insolvent government-run defined benefit programs. As a result, this uncertainty threatens the system's security and in turn compounds the uncertainty (Mitchell and Zeldes 1996). A funded defined contribution approach, by contrast, reduces government's need to periodically change social security benefits and taxes, in response to solvency pressures.

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<sup>9</sup> The Advisory Council's Final Report as well as that of the Technical Panel on Trends in Income and Retirement Saving may be accessed via the internet as follows: <http://www.ssa.gov> An alternative

There are other factors that must also be attended to when evaluating the movement to defined contribution plans. Pension systems in the past had the great virtue of being able to pool a variety of risks ranging from income loss due to disability, economic insecurity due to longevity, and (sometimes) inflation. As we have shown, some of these risks are protected against in the Latin American two-pillar structures described above – for instance, they provide some earnings insurance due to the linkage between contributions and eventual benefits, and some require mandatory annuitization at retirement. These programs also afford a degree of protection against poverty, due to their first-pillar minimum benefit.

On the other hand, some risks are not well pooled in a defined contribution pension system. For example, the worker losing his job due to skill obsolescence or injury will see this pay cut reflected in his defined contribution pension contributions (and eventual retirement benefits). When the first-pillar minimum public pension is raised to offer a larger “cushion” or safety net, this tends to result in evasion, lower private saving, and reduces labor supply. The fact that many Latin American nations have restricted their country pension portfolios mainly to domestic assets also makes these systems – and their participants – particularly vulnerable to country-specific macroeconomic risk. It seems likely that more international asset diversification will become the norm in the next decade, particularly in countries highly dependent on export markets.

Irrespective of the model for pension reform that is chosen, thoughtful analysts ultimately agree that that no pension system can protect against the risk of world-wide shocks. We believe that it is imperative for reformers to acknowledge this risk, so as to more accurately represent to workers and retirees the potential for variability in their future income streams. Only a realistic vision of what a retirement system can provide will produce a pension system strong enough to weather the demographic, political, and financial challenges of the next century.

**Table 1: Wealth Holdings of Older US Households by Wealth Decile**

Wealth Decile	Current Wealth	Projected Wealth at Age 62	Projected Wealth at Age 65
1	\$ 39,470	\$ 43,804	\$ 49,031
2	97,452	109,578	121,123
3	156,288	182,494	202,946
4	219,797	256,636	283,184
<b>5</b>	<b>287,692</b>	<b>338,153</b>	<b>372,701</b>
6	364,802	429,253	471,308
7	459,858	543,397	595,408
8	590,079	699,681	763,756
9	804,934	944,894	1,030,054
10	1,764,414	2,117,052	2,362,963
<i>Full Sample</i>			
<b>Mean</b>	\$478,313	\$566,431	\$625,066
-Housing	65,940	76,410	80,507
-Financial	175,974	205,653	228,133
-Social Security	119,793	128,712	142,018
-Pension	116,606	155,656	174,408
<b>Median 10%</b>	\$325,157	\$382,678	\$420,537
-Housing	59,746	71,097	75,047
-Financial	66,530	71,004	71,175
-Social Security	133,606	143,864	160,824
-Pension	65,275	96,713	113,491

Source: Health and Retirement Study data; computations by Moore and Mitchell (1997)

**Table 2. Private Employer-Sponsored Defined Benefit and Defined Contribution Pensions in the United States**

	<u>Total</u>	<u>DB plans</u>	<u>DC plans</u>
Number of plans:	702,097	12%	87%
Number of participants:	83.9M	48%	52%
Assets:	\$2.3B	54%	46%
Contributions received:	\$154M	34%	66%
Benefits paid:	\$156M	51%	49%

(Source: Mitchell 1996a)

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**Table 3. Administrative Costs in Private US Defined Benefit and Defined Contribution Pension Plans**

**I. Annual Administrative Costs for a Corporate Defined Benefit Pension Plan:**

\$850/yr/participant for small plan (15 lives) *versus*  
 \$56/yr/participant for large plan (10,000 lives)

**II. The Defined Benefit/Defined Contribution Cost Ratio Has Risen Over Time:**

<u>Year</u>	<u>Small Plan</u> <i>(15 lives)</i>	<u>Large Plan</u> <i>(10,000 lives)</i>
1981	142%	91%
1996	216%	139%

Source: Mitchell and Scheiber (forthcoming)

Money management costs are excluded from these computations.

**Table 4. Assets by Plan Type: US Private Defined Benefit and Defined Contribution Pensions**

<b>Asset Category</b>	<b>Defined Benefit</b>		<b>Defined Contribution</b>	
	<b>1983</b>	<b>1996</b>	<b>1983</b>	<b>1996</b>
Equity	45%	57%	27%	60%
Bonds	27	33	22	30
Other	28	10	51	10

Source: Mitchell (1996a)

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**Table 5. Mutual Fund Expense Ratios by Fund Type**

(Funds with assets > given levels)

<b><u>Type of Fund</u></b>	<b>Dollar Weighted Average Expense Ratio</b>		
	<b><u>Average</u></b>	<b>Lowest</b>	<b>Highest</b>
		<b><u>Quartile</u></b>	<b><u>Quartile</u></b>
	<i>(%)</i>	<i>(%)</i>	<i>(%)</i>
Equity Index (A>\$100M)	0.324	0.150	1.640
Money Market (A>\$1B)	0.613	0.150	1.000
Fixed Income (A>\$1B)	0.876	0.280	2.000
Growth (A>\$500M)	1.043	0.500	2.460
Growth & Income (A>\$500M)	0.834	0.390	1.840
Balanced (A>\$250M)	0.895	0.350	1.910
Global (A>\$250M)	1.250	0.840	1.380

Source: Mitchell (1996a)

Expense ratio defined as fraction of assets devoted to fund administrative expenses annually.

**Table 6. College Retirement Equity Fund (CREF) Administrative Expenses**

<b>Type of Fund</b>	<u>Total</u> <u>Expenses</u> (%)	<u>Investment</u> <u>Advisory Fees</u> (%)	<u>Administrative</u> <u>Expenses</u> (%)	<u>Distribution</u> <u>Expenses</u> (%)
Equity Index	0.32	0.08	0.21	0.03
Stock Account	0.34	0.10	0.21	0.03
Growth	0.42	0.18	0.21	0.03
Global equities	0.41	0.17	0.21	0.03
Social choice	0.33	0.09	0.21	0.03
Money market	0.29	0.05	0.21	0.03
Bond market	0.30	0.06	0.21	0.03

Source: Mitchell (1996a)

**Table 7: Key Features of Several Latin American Pension Reform Programs**

	<b>Chile</b>	<b>Peru</b>	<b>Argentina</b>	<b>Colombia</b>	<b>Uruguay</b>	<b>Mexico</b>
<b>Structure</b> 1 <sup>st</sup> Pillar 2 <sup>nd</sup> Pillar	Mandatory Public Private Only	Mandatory Public Optional Pub/Priv.	Mandatory Public Optional Pub/Priv.	Mandatory Public Optional Pub/Priv.	Mandatory Public Optional Pub/Priv.	Mandatory Public Private Only
<b>Financing</b> E'r payroll tax E'ee payroll tax Other Gen'l Rev.	0% 10% Yes	0% 11% or 10% Yes	0% 11% both Yes	10%/7.5% 3.5% or 2.5% Yes	NA/0% NA/0%-7.5% Yes	0% 6.5% Yes
<b>Benefits</b> Ret. Age (m/f) 1 <sup>st</sup> Pillar: %Pay 2 <sup>nd</sup> Pillar: Payout	65/60 25% Lump-ProgWD- Annuity	65 NA ProgWD- Annuity	65/60 28% ProgWD- Annuity	62/57 55% ProgWD- Annuity	60 NA Annuity	65 40% Annuity- ProgWD
<b>Regulatory Structure</b> Fees Regul. Int'l Invest. OK Min. ROR Req.	Yes Yes Yes	No Yes Yes	No Yes Yes	NA NA NA	No No Yes	No Yes No
<b>Transition Costs</b> % of GDP Recog. Bond	100-80% Yes	27% Yes	NA No	87% Yes	NA No	80% No
<b>Performance</b> Fund (US\$) Fund (%GDP) Recent ROR (%) AFP's (No.) Affiliates (No.)	\$28B 41% ('94) 12.5% ('82-95) 15 5.5M	\$900M 1.5% ('96) 15.5% ('94-95) 6 1.5M	\$4.5B 0.7% ('95) 19.9%('95-96) 21 5.5M	\$50M NA 15.5% ('96) 9 2.1M	\$25.6M NA NA 6 0.5M	\$3.9B NA NA 25 11.2M

Source: Mitchell (1997d) and Barreto and Mitchell (1997). NA signifies not available. ProgWD signifies programmed withdrawal. E'r signifies employer; E'ee means employee.

**Figure 1. Asset Growth in US Private Defined Benefit and Defined Contribution Pension Plans over Time**

**Figure 2. Participation in US Private Defined Benefit and Defined Contribution Pension Plans over Time**

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