

REAL ESTATE INVESTMENT FOR
DEFINED CONTRIBUTION PLANS
AN ANALYSIS

by

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ABSTRACT

This thesis analyzes the growth of defined contribution pension plans and the trends that have lead to its increasing use as the pension plan form of choice. The focus of the analysis is an assessment of the potential impact of defined contribution plans upon the real estate industry, especially in light of the current decline in defined benefit plans. The combination of over-funding and termination of defined benefit plans threaten to reduce the flow of investment capital from private pension plans. As defined benefit plans are terminated they are being replaced with purchased retirement annuities or defined contribution plans. Either option reduces the flow of funds from the private plans into real estate investment.

The results of this analysis demonstrate that the potential for attracting investment dollars from defined contribution plans is quite high. The thesis concludes that current innovations may not be enough. The defined contribution pension fund represents a vastly different investment environment than the traditional plans. Identifying and then reaching out to the individual investor within the defined contribution plan, in particularly the 401(k) plans, will necessitate a vastly different approach. Attracting investment funds from the 401(k) pension plan will require a sophisticated marketing strategy more akin to the retail investment market. The analysis identifies the market segment within the 401(K) plan who represent the most likely source of investment capital.

Introduction

In the decade of the eighties pension funds emerged as a dominant source of capital for the real estate industry. Should current trends be maintained pension funds will exert an enormous influence upon the direction that the real estate industry will take throughout the next decade.

The long-term structure of pension funds easily accommodated the inclusion of real estate within their investment portfolios. However, new trends are developing that may alter pension funds future role in real estate investment. The current stabilization (if not decline) in the growth of the traditional defined benefit pension plan with its long-term orientation threatens to restrict the flow of investment capital emanating from private pension plans. Concurrent with this trend is the exponential growth in defined contribution plans. Real estate plays only a small role in the portfolios of defined contribution plans. The increasing use of 401(k) savings plans threaten to exclude real estate from a growing source of investment capital. The risk-averse investors within the 401(k) plan continue to resist the inclusion of alternative investment vehicles within their conservatively structured portfolios.

This thesis examines the current trends in the growth of defined contribution plans in favor of the traditional defined benefit plan. Particular attention is paid to the

increasing utilization of 401(k) plans. These plans pose special challenges in attracting investment capital to real estate investment. By analyzing the underlying investment patterns of these plans innovative methods of accessing this market may be developed that will enhance the industry's current attempts to create innovative investment vehicles that will attract funds from this exponentially growing capital source. Interviews with plan sponsors, investment managers and realty funds were utilized as an vital resource in understanding the complex needs and requirements driving the investment strategies of defined contribution pension funds.

Chapter 1 presents an historical overview of trends and events influencing the growth of pension funds. The chapter presents a brief overview of the pension funds growing influence within the real estate industry as well as ERISA legislation's role increasing pension funds' role in real estate investment.

Chapter 2 discusses the factors involved in the trend within private corporate plans for the use of defined contribution plans. The role of legislation in accelerating the declining use of the defined benefit is examined for its impact on the shift towards defined contribution plans.

Chapter 3 will review how real estate investment has been historically incorporated into defined contribution plans. Major defined contribution plans incorporating real estate investment are examined to identify what role real estate plays in their investment strategies. Real estate investment vehicles for 401(k) plans will be discussed for their unique structural adaptations in meeting the requirements of these plans.

Chapter 4 contains an analysis of the driving motivations underlying investment strategies in 401(k) plans. The purpose of this analysis will be identify and discuss the unique investment characteristics of the 401(k) plan participant.

Chapter 5 brings together the analysis undertaken in chapters 2,3 and 4 and examines how real estate fund managers might enhance current strategies for attracting investment funds from 401(k) investors. The potential for success of various real estate investment vehicles into defined contribution portfolios will be explored.

Chapter 6 presents a summary of the findings of the thesis.

Chapter 1

1.1 Pension Funds: An Overview

Pension funds represent the largest single pool of long-term capital in the U.S. today. Total pension assets in 1989 were valued at over \$2.6 trillion. Pension fund assets have tripled in size since 1979 and are projected to reach \$3 trillion by 1995 [1]. The importance of this rapidly growing source of investment capital is reflected in their holdings. Pension funds now own nearly 15 percent of all taxable bonds and 26 per cent of all equity in the U.S. economy [2]. In fact, during 1982, pension funds surpassed retained earnings for the first time as a source of capital for business financing.[3]

Historically pension funds have been investors in common stock and long-term bonds. The portfolio mix of these investors initially favored bonds during the 50s and gradually shifted to equities so that by 1972 stocks represented 74% of the pension fund portfolios mix [4]. The gradual shift in pension fund portfolios in favor of stocks occurred over a twenty-five year period. Despite a long-term horizon and limited liquidity requirements pension funds viewed stocks as highly speculative investments. Maintaining a large percentage of their portfolios in high quality corporate bonds and government securities was

thought of as necessary to balance the fluctuation in annual investment returns resulting from stocks' high volatility [5]. Diversification as a method of reducing overall portfolio risk focused upon the composition of equity and bond holdings and rarely took into consideration the impact of other asset classes upon portfolio volatility. This concentration upon stock and bond holdings is explained in large part by the fact that the majority of pension fund investment managers were trained in security analysis and other investment vehicles were beyond their field of expertise. As long as portfolio performance matched plan objectives there was very little motivation to search out other investment alternatives [6].

Several developments occurred in the mid-70s that contributed to the motivation of pension investment managers to expand their concept of portfolio diversification to include real estate and other investment options. Pension fund portfolios experienced dramatic value reductions due to the combination of double-digit inflation and concurrent high interest rates that plagued the seventies [7]. This economic climate challenged the perception that diversification within the traditional asset classes was sufficient to minimize investment risk.

Another development spurring diversification into alternative investments assets was the passage of the Employment Retirement Security Act of 1974 (ERISA). ERISA

was enacted as a sort of "centralization of regulation" for the management of pension funds [8]. ERISA essentially converted pension liabilities from their original status as a fringe benefit to a legal claim by beneficiaries against the Corporation. Corporations were now liable for the full funding of their pension plans. In the event that a corporation's pension plan was unable to meet its fiduciary responsibility to vested beneficiaries, up to 30% of the corporations net worth could be attached in the form of a federal tax lien in order to satisfy the shortfall [9]. In other words, the corporation was now directly responsible to ensure the security of its pension plan in meeting its fiduciary obligations.

Perhaps the most important aspect of the ERISA legislation to portfolio investment is found in section 404 which defines the application of the "Prudent Man" rule in pension fund investment. Section 404 of ERISA mandates that any one with discretionary authority in the administration of a plan, or anyone who provides advice to a plan for compensation, or who has authority or responsibility to do so is a fiduciary under ERISA [10]. As stated in section 404 the fiduciary shall:

"discharge his or her duties solely in the interest of plan participants or beneficiaries, and A) for the sole purpose of providing plan benefits to them; B) with

care, skill, prudence, and diligence under the circumstances then prevailing that a prudent man acting in a like capacity and familiar with such matters would use; C) by diversifying the investments of the plan so as to minimize the risk of large losses, unless under the circumstances it would be prudent not to do so, and D) in accordance with the plan documents and instruments." [11]

It is clause C that specifically refers to the diversification of the pension plan's investments. In the ERISA Committee Reports the parameter for diversification are delineated to include: 1) "the type of investment, whether mortgages, bonds or shares of stock or otherwise; 2) distribution as to geographic location; 3) distribution as to industries; 4) the dates of maturity" [12].

The key clause governing the investment policies of pension fund portfolios Section 404(c) has frequently led to confusion and controversy in its interpretation. Mandating the need for diversification of investments 404(c) does not specifically outline the extent to which diversification must take place. Pension fund managers' initial response to ERISA legislation was to interpret the intent of 404 as restricting pension fund portfolios' to only conservative investments [13]. Subsequent rulings by the Department

of Labor (DOL) addressed this issue by clarifying that the "prudence" rule did not rule out risky investments nor investment in nontraditional assets [14]. The intent of the "prudent man" rule as defined by the DOL is to ensure that ERISA's fiduciary standards are upheld in the prudent formulation of conventional or alternative investment programs.

That ERISA has often been interpreted as having defined specific percentages for the inclusion of nontraditional assets, especially as regards real estate investment, is most likely a misinterpretation of section 404(a) limiting the inclusion of a sponsor's own assets within the fund to "10 percent of the sponsor's securities or real property" [15].

The purpose of Section 404(c) was to ensure that pension plan investments encompassed a broad array of investments in order to "minimize the risk of large losses, unless it is clearly prudent not to do so" (ERISA). Real estate's value in achieving diversification goals is described in DOL statements that "...non traditional investing can improve diversification if it includes new investment opportunities in such areas as small business and real estate." [16]

The performance of real estate during the inflationary period of the seventies was not lost upon investment managers. Subsequent studies demonstrated that real estate

produced long-term returns comparable to common stock and bonds with the added benefit of having an overall positive correlation to inflation and low volatility. Moreover, real estate returns were shown to have a low or negative correlation to both stocks and bonds [17]. Thus encouraged through experience, legislation and research, pension fund investment managers moved real estate into the mainstream of pension fund investment activities.

Since the mid-seventies pension funds have increased their holdings of real estate from less than 1 percent to between 3 and 5 percent of assets. In a two year period real estate equity investments nearly doubled from \$52 billion in 1987 to \$94 billion in 1989. Assets increased \$20 billion from 1987 to 1988 and another \$22 billion in 1989 [18]. As of 1989 pension funds had allocated only about 5 percent of their estimated \$2.6 trillion in total assets to equity real estate. Although well short of the 10 percent allocation advocated by industry consultants as appropriate for investment they remain one of the fastest growing sources of institutional real estate capital [19].

The importance of pension funds to real estate investment is emphasized by projections of industry analysts that pension funds will become "the primary source of debt and equity for real estate in the 90s" leading to a total investment potential of "\$250 billion by 1992" [20].

Pension plans are categorized under two broad classifications of "public" or "private". Their investment decisions are directly influenced by the laws and regulations that govern them: Private plans being regulated by ERISA and public plans by the laws of the respective jurisdictions. It is within the "private" plans that significant developments are taking place which may indicate a changing role for pension funds in real estate investment.

CHAPTER 2

2.1 Private Pension Plans

As of 1989 private pension assets accounted for \$1.362 trillion of the total \$2.3 trillion asset value for all pension funds [21]. Through their aggressive investment strategies private pension funds have had an important influence upon the direction that pension fund investment has taken since the mid-seventies.

The private plans were instrumental in expanding the universe of investment vehicles beyond the traditional asset mix of equities and bonds. Private corporate pension funds pioneered the incorporation of real estate investments into pension fund portfolios. These funds initially utilized mortgage securities in accessing the real estate market. The attraction for real estate mortgages as an investment vehicle can be explained through their resemblance to fixed income instruments with which pension fund investment managers were already familiar.

As investment strategies have become more sophisticated pension funds have grown accustomed to incorporating a wide variety of real estate investment vehicles within their diversification strategies. By 1989 private corporate pension plans accounted for \$51.72 billion of the \$94

billion allocated to real estate investment by all pension funds [22].

Many of the optimistic forecasts for real estate investment growth rely upon the assumption of pension funds attaining or exceeding the targeted 10 percent asset allocation level. However, pension funds have fallen well short of this target and allocate on average only 5 percent of invested assets to real estate investment. New trends are developing within the private pension plans that may force the reassessment of the projections for growth in real estate investment from these funds. A recent survey of asset allocations to real estate by the largest funds indicated that, net of appreciation, nearly all the new dollar investment originated from the public funds and telephone company pension plans. Asset allocations to real estate by the largest corporate funds actually declined from 5.1 percent to 4.5 percent [23]. The developments behind these trends as identified and analyzed in the following discussion include: The stabilization of growth in defined benefit plans, the primary source of long-term pension fund investment in real estate; the declining rate of contributions to defined benefit plans, contributions being the source for new investment capital from defined pension plans; and the exponential growth in defined contribution plans. The growing shift among private funds to defined contribution plans is of particular relevance for

its impact upon investment by private plans in real estate. To date, real estate investment has made few inroads into the portfolios of these plans.

2.2 Plan Definitions

Pension funds are primarily of two types: defined benefit and defined contribution. The basic difference between these pension plans lies in what is promised by the employer in formulating an employee's retirement benefit package (Figure 2.1). In defined benefit plans the employer guarantees retirement benefits through a specified formula that is generally based upon a fixed percentage of salary per year of plan participation.

Under a defined benefit plan the plan sponsor has the fiduciary obligation as defined by ERISA to ensure the fulfillment of that guarantee. The amount of the sponsor's total annual contribution is dependent upon the performance of the pension fund's invested assets. ERISA allows for 3 vesting procedures for defined benefit plans. Three vesting schedules cited and approved by ERISA are as follows:

- 1) Cliff vesting. This provides full vesting (100 percent) after 10 years of service. There is no vesting prior to completion of 10 years of service.

Figure 2.1
Qualitative Distinctions between
Defined Benefit and Defined Contribution

<u>Feature</u>	<u>Traditional Defined Benefit (DB)</u>	<u>Traditional Defined Contribution (DC)</u>
Plan Defines	Income	Contribution
Distribution of money	Most money to age 55 and over group	Most money to age group under 55
Employee appeal	Older, longer service	Younger, shorter service
Size of severance benefits for short service	Small	Large
Understandibility	More difficult	Less difficult
Flexibility to solve new retirement problems	Substantial (You can increase benefefits overnight)	Little or none
Vesting schedule	Slower	Faster
Funding flexibility	Range (Subject to minimum employer liability under law)	None, unless benefits are changed
Administration	Complex	May be more complicated to administer
Federal regulations	Complex	Somewhat less complex

* Source: Larry Lang, Pension World, October 1986

This is the vesting schedule selected by most sponsors of defined benefit plans because it is the simplest to administer and also the least expensive. The record keeping is much simpler than that of the other alternatives.

2) Graded vesting. This form provides for 25 percent vesting after five years of service plus 5 percent for each additional year of service up to 10 years (that is, 50 percent vesting after 10 years), then 10 percent vesting for each year thereafter so that full vesting is achieved after 15 years of service.

3) The rule of 45. This form combined age and years of service. A participant is 50 percent vested when, with at least 5 years of service, his or her age and years of service add up to 45. From then on vesting accrues at 10 percent per year.

The structure of these vesting schedules allow for long-term planning in pension fund investment strategies. Other vesting schedules may only be implemented with IRS approval [24]. During periods of exceptional investment returns plan assets may not only match liabilities but exceed them creating a surplus. A surplus eliminates the need for the employer to make further contributions until

such times as investment reversals may result in the plan being under-funded requiring the employer to make-up the difference. Maximizing returns of invested assets lowers the cost of maintaining the pension plan by diminishing (if not eliminating) the contributions required to ensure full-funding of the plan's liabilities. Portfolio investment performance then becomes of paramount concern to the plan sponsor.

In a defined contribution plan all that is specified is the amount of the contribution. Whether it is the employer or employee who makes the contribution is dependent on the type of plan that is in place. In employer directed contribution plans, the money contributed to the fund by the employer and employee is defined according to rules and formulas based on such factor as pay, years of service, company profits, and the amount of voluntary employee contributions. Contributions are pooled for investment in one or more plan funds. But each employee has an individual account. In recent years employees have gained increasing discretion over the allocation of their account among the plan's investment funds.

For the defined contribution plan sponsor no obligation exists to ensure the performance of a plan's investments. Investment earnings on contributions accrue entirely to the employee, as do any losses. The sole obligation of the plan sponsor is to provide the employee with investment options

which meet the investment criteria established by section 404 of ERISA's "Prudent Man" principle. In order to clarify the fiduciary's responsibility in choosing investment vehicles, ERISA added a key passage to the 404 "prudent Man" rule that stipulated that the fiduciary's performance would be measured the actions of other fund managers "acting in a like capacity and familiar with such matters" [25]. The new rule assumes a level of expertise in the plans sponsors peers. The "Prudent Man" principle was thus expanded to become known as the "Prudent Expert" rule. "

While ensuring the quality of investment choices for defined contribution participants section 404(c) significantly relieves the plan sponsor from liability for investment performance. Liquidity and valuation of these investments become of primary importance as many defined contribution plans range in vesting requirements from immediate vesting to a maximum of 7 years (typically the latter being required in employer-directed plans).

Because of their long-term orientation and emphasis on maximizing portfolio returns defined benefit plans are more receptive to including real estate within their investment strategies. Defined benefit plans still accounted for over 98 percent of the \$51.2 billion 1989 investments allocations from private plans in real estate. However, while defined benefit plans grew 77% from \$399 billion in 1982 to \$707 billion in 1989 the proportion of total private trustee

pension assets held by defined benefit plans fell from 61 percent to 56 percent [26]. Assets of defined benefit plans reached nearly \$1 trillion as of 1987 covering nearly 39.6 million workers [27]. While the assets of define benefit pension plans have continued to grow (Table 2.1) many plans are at or near full funding and are now paying out more in benefits than they are receiving in contributions [28]. The continued growth in the assets of defined benefits is mainly attributable to investment gains as both the level of contributions and actual number of these plans are decreasing (Table 2.2). The relevance of this trend for real estate investment is that contributions are the capital sources for new investment from defined benefit plans. Secondly, terminations of defined benefit plans have been increasing. Figure 2.1 demonstrates the dramatic increase in the termination of fully-funded private defined benefit plans annually since 1980. Figure 2.2 indicates that as the percentage of employees covered by defined benefit plans have decreased there has been a corresponding increase in the percentage covered by defined contribution plans. Unless sponsors of defined benefit plans increase their percentage asset allocation for real estate future investment may be flat and actually decline. This may be already occurring as the 8 percent asset growth that has occurred within defined benefit plans is mainly attributable to gains on investments rather than actual plan formation [29].

In fact, since 1974 the percentage of total plans that were defined benefit (both single and multi-employer) decreased from 34 percent to 26.7 percent [30].

While the growth in defined benefit plans has flattened, the growth in defined contribution plans over the

Table 2.1

Asset Distribution of Private Trusteed Pension Plan

by Plan Type: 1982-1989

End of:	<u>Single Employer</u>		Multiemployer	Total Assets
	<u>Defined Benefit</u>	<u>Defined Contribution</u>		
	(billions)			
1982	\$ 399	\$ 196	\$ 61	\$ 655
1983	449	239	72	760
1984	460	256	79	795
1985	545	325	98	967
1986	588	359	114	1,061
1987	598	386	117	1,102
1988	680	427	130	1,237
1989	752	463	147	1,362
1990	757	437	144	1,338

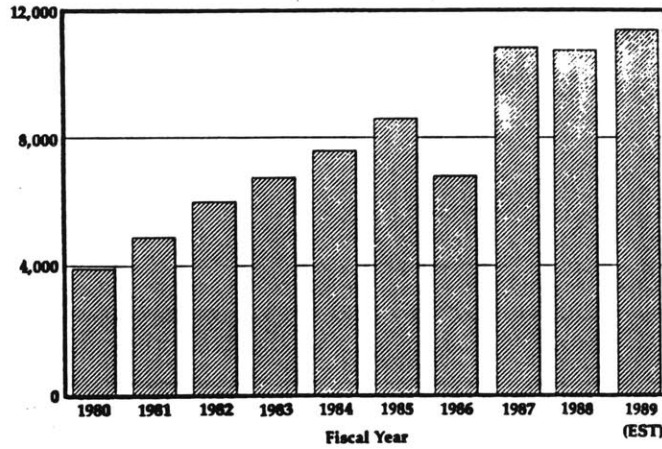
* Source: Employee Benefit Research Institute: Issue Brief No. 101, April 1990

Table 2.2**Private Pension Plan Contributions by
Size of Plan and Typr of Plan: 1980-87**

Year	Total	Defined	Defined
	(millions)	Benefit	Contribution
1980	66,157	42,626	23,531
1981	75,374	46,985	28,389
1982	79,502	48,438	31,064
1983	82,447	46,313	36,134
1984	90,625	47,197	43,428
1985	95,118	42,010	53,108
1986	95,540	37,040	58,500
1987	99,595	35,180	64,415

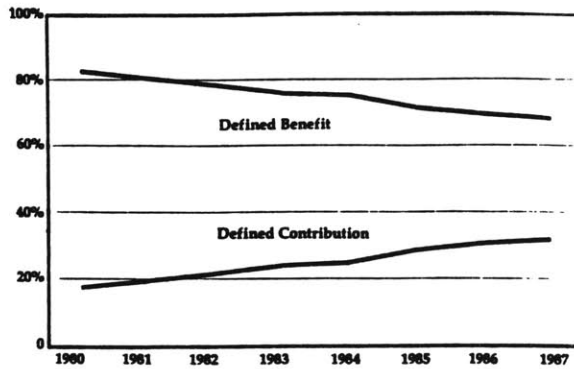
*Source: Form 5500 series reports filed with the Internal Revenue Service

Figure 2.1
 Single-Employer Sufficient
Plan Terminations



* Source: Pension Benefit Guaranty Corp., Pension World, February 1990

Figure 2.3
 Defined Benefit - Defined Contribution
Percent of Employees Coverage



* Source: Pension Benefit Guaranty Corp., Pension World February 1990

last seven years has been explosive. Between 1982 and 1989, defined contribution plan assets increased 122 percent, from \$196 billion to \$432 billion and now cover 27.2 million people [31]. Defined contribution plans now represent 73 percent of all pension plans - up from 63% in 1975. A 1988 US Accounting Office study of 35,000 firms, revealed that essentially "all companies with 500 or more employees" sponsored a defined contribution plan [32]. The majority of pension plans now initiated by firms with fewer than 100 employees are defined contribution. Should present growth trends continue, assets of defined contribution plans may reach \$1 trillion by 1994 [33].

It is important that the real estate industry understand the underlying issues behind the accelerating utilization of defined contribution plans with the concurrent decline in the number of defined benefit plans as well as the implications of these trends. The challenge to the industry then becomes one of discerning if this trend is an opportunity to access a rapidly growing pool of capital or a development which threatens to reduce a \$51 billion source of investment capital.

The issues influencing the decline in the use of private defined benefit plans are as diverse as they are complex. Most pension fund industry analysts appear to be in agreement that the decline in the popularity of the defined benefit plan began with and continues to be affected

by ERISA legislation [34].

Since its inception, ERISA has been amended "no less than seven times" [35]. ERISA together with ever more complicated accounting standards increasingly cited for making compliance by plan sponsors a tortuous and expensive undertaking. An example of the increased accounting burden is FASB87 which requires the inclusion of unfunded pension liabilities on the body of corporate balance sheets beginning in 1989. There is no such requirement for defined contribution plans as they are considered by ERISA to be fully funded at all times. Regulations concerning issues such as: integration, which sets minimum levels for reduction of pension benefits against social security benefits; minimum coverage standards that require minimum standards for lower paid employee participation; and minimum participation rules requiring minimum levels of employee participation [36] are exceedingly complex to administer. The liability issue is especially onerous in employers minds, not only for the fiduciary responsibility that is put upon plan sponsors, but also for the issues concerning penalties for minimum contributions as well as accounting standards that force companies to apply pension fund liabilities against corporate balance sheets [37]. Finally, increases in pension fund premiums (paid to the Pension Board Guarantee Corporation (PBCG) the governing board set up under ERISA legislation to guarantee future employee

benefits have nearly double the cost of this maintaining these plans [38].

Faced with these regulations established private pension plan sponsors are electing to terminate their traditional defined benefit plans. New plan sponsors opt for defined contribution plans which avoid many of ERISA's requirements and thus eliminate many of the risks, complexities, and expenses incurred in sponsoring a defined benefit plan.

A secondary issue leading to increased termination of defined benefit plans involves the reversion of surpluses created from over-funded pension funds. The success of pension fund investment strategies coupled with a booming equities market left many pension funds over-funded in terms of their liabilities. The temptation for many corporations during the eighties was to "capture" these tax-free surpluses by terminating their plans and then purchasing guaranteed annuities for their employees while pocketing the difference. Often these annuities resulted in lower benefits to beneficiaries than might have been received under the original plan [39]. The passage of ERISA never envisioned this problem and legislation has been slow to react. Several corporate buy-outs were initiated with the focus on "capturing" these surpluses to fund unrelated activities. Several bills are now before congress to severely restrict the reversion of pension surpluses [40].

Despite the geometric growth in defined contribution plans throughout the eighties real estate investments have made only negligible in-roads into these pension funds accounting for a minuscule .7 percent of invested assets as of 1988 [41]. It is structure of the defined contribution plans themselves that form the major impediments to incorporating real estate investment within defined contribution portfolios.

2.2 Defined Contribution Plans

Defined contribution investment plans typically are either employer-sponsored or employee-directed. In the employer-sponsored plan the employee is offered an investment option in a fund (through profit-sharing or fixed contribution) in which the employer maintains control over the fund's management. The pension investment strategies of these plans resemble those of defined benefit plan sponsors and will often have impose limitations on the employee's ability to withdraw in and out of the fund. Several private private plan sponsors interviewed for this project maintained that their employees generally preferred the employer-direct option as it relieved them of the burden of having to manage their own portfolios. An analysis of the portfolios of large employer-directed plans conducted through personal interviews with several plan sponsors and

fund managers of demonstrated the emphasis upon diversification strategies that included real estate holdings as an important aspect of their portfolios. Surprisingly the survey revealed that a few of these plans held almost 20 percent of their invested assets in real estate, a number significantly higher than many defined benefit plans to date. Under the employer-directed plans liability remains an issue. Plan sponsors of employer directed plans tended to be paternalistic in nature and deeply concerned over the welfare of their long-term employees. In keeping with the increasing trend towards employee directed plans the survey indicated that many plan sponsors offered newer employees the employer directed fund only as an option and in one case the employer-fund was structured as a "closed" fund for long established employees. Newer employees were then offered investment options that were structured to minimized the employer's liability exposure for the employees' portfolio performance.

Due to the liability issue over 90 percent of defined contribution plans are now employee directed. ERISA has accommodated and encouraged this trend by proposing further amendments to section 404(c) that will lower the liability of employers' for the performance of the employees invested funds [42]. The liability of the employer is reduced to ensuring that enough investment options are offered to fulfill the requirements of the section 404(c) "Prudent Man"

principle. The extent of diversification within the individual portfolios is left to the employees' discretion.

2.3 401(k) Plans

The most popular vehicle for retirement planning within the defined contribution universe has become the 401(k) plan. The 401(k) plan has eclipsed the individual retirement account since the Tax Reform Act of 1986 eliminated the deduction for income contributions made to the IRA [43]. The advantage of the 401(k) plan is that it allows both employers and employees to defer taxes by placing income in employee retirement accounts. These pension plans have proven especially popular among employees due to the investment discretion and special options such as the ability to borrow against the funds in their accounts.

The use of 401(k) plans has increased 600 percent since 1983 [44]. As of 1989 27.5 million employees , or 24.52 percent of the U.S. work force, had 401(k) plans available through their employers. The total is up from 7.1 million, or 7.1 percent of the work force in 1983 [45]. Among companies that instituted the programs in 1988, 56.9 percent, or 15.7 million workers participated. The 401(k) is becoming most popular retirement benefit plan of choice among companies offering defined contribution plans. With current growth trends 401(k) plans will become the defined

contribution retirement plan of choice dominating a \$1.1 trillion market.

Based upon the number of real estate investment vehicles specifically created for 401(k) retirement plans, it is apparent that these pension funds will become the real estate communities's primary market target for attracting investment capital. The focus of the following chapter is on the vehicles used by those defined contribution plans with real estate already in their portfolios. The analysis then turns to studying the real estate investment vehicles currently being offered to defined contribution plans by real estate advisors and the various mutual funds. The purpose of the analysis is to try and gauge the success of these offerings and the potential of future growth of these funds as vehicles for investment by defined contribution pension plans.

CHAPTER 3

3.1 Employer-Directed Plans

Real estate investment within defined contribution plans is not a radical new development. Several long established corporations and institutions have maintained sizable real estate holdings within the portfolios of their defined contribution pension funds for over 30 years (See table 3.1) [46]. All investment funds within this category were employer-directed pension plans with employee investment options being extremely limited. The method utilized in bringing real estate investment within the means of plan participants typically takes the form of a commingled fund. In some cases the fund takes advantage of the underlying real estate assets held by the corporation. The real estate is pooled and the value unitized and then distributed to participants in the form of a mutual fund. Generally these funds are based upon profit-sharing plans in which the employer's contribution is deposited directly into the fund. The participants who elect to have a 401(k) plan as their primary retirement plan are often given the option to invest in the fund under the same restrictions.

The structure of these real estate funds varied significantly although all are similar in providing a fixed return based upon percentage invested on behalf of the

individual plan participant. Representative of the method in which real estate once held by the employer is rolled into the benefit plan takes the form of a lease-back. The real estate assets of the firm are first incorporated into a trust and then leased back by the corporation. Under this arrangement great care must be taken to ensure that the plan structure does not create a conflict of interest that violates ERISA regulations concerning the incorporation of a plan sponsor's real property into a pension plan. The income through the lease-back generated is then passed on through to the investors of the fund. Distributions are derived from the cash flow generated by the properties as well as from residuals from the sale of the assets. Thus the fund took on the characteristics of a long-term fixed income investment. These commingled funds generally take the form of a "closed" fund, participation being open only to employees of the firm.

As in all defined contribution plans the issue of liquidity and valuation have to be addressed by these employer-directed funds. Typically, liquidity is managed in two ways: one method for ensuring liquidity involves the maintenance of a separate cash reserve to cover unanticipated withdrawals. Generally these plans are far more restricted in their withdrawal regulations and participants are often required to give as much a 90 days notice to withdraw. In this way some of these plans

maintain restrictions that are similar in scope to other market-oriented commingled funds. The second method relies on the flow of incoming funds to maintain the liquidity demands of withdrawals. In some plans this new flow of funds into the pool will be temporarily "parked" into an ongoing

Table 3.1

**Large Defined Contribution Plans
with Real Estate Investment**

<u>Fund</u>	(millions)	
	<u>Real Estate Equity</u>	<u>Total Assets+</u>
TIAA-CREF	3,000	81,000
Xerox	240	3,191
Trans World Airline	95	1,415
American Stores	76	1,832
Bechtel Power	72	1,655
United Methodist Church	62	1,423
United Parcel Service	37	894
Halliburton	33	1,175
Detroit Systems	15	497
National Electrical Contractors	13	185
Equitable Life Insurance	3	699
Evangelical Lutheran	3	1,407
Eli Lilly	1	1,022

+Describes Defined Contribution Plan Only

*Source: Pensions and Investments, January 22, 1990

cash account thereby providing a constant buffer to replace net outflows. Because of the more restrictive nature of these funds liquidity requirements can be more exactly timed to match outflows from the fund with inflows. As will be demonstrated, many of the real estate investment vehicles designed for the employee-directed funds also utilize one or more of these methods to provide liquidity in the fund.

3.2 The Employer-Directed Funds: Case Studies

Case 1: Halliburton Company

One of the larger defined contribution plans incorporating a significant real estate holding (table 3.1) is sponsored by the Halliburton Company of Texas. With total assets of \$1.3 billion* the fund, established in 1944, is among the largest defined contribution plans as well as one of the oldest [47]. The primary retirement plan is an employer-directed, profit sharing fund with a minimum vesting period of seven years. The pension plan is structured such that the employer contribution is deposited directly to the fund. The fund itself is a diversified portfolio of equity, fixed income, mortgage securities and real estate the latter representing about 2 percent of the funds assets. The real estate portion consists primarily of CREFs (Commingled Real Estate Funds) including a small

position within the PRISA fund (the real estate is managed through outside advisors). Rather than a strategic addition to the portfolio, the real estate investments were originally allocations made in separate smaller pension vehicles that had been "rolled" into the primary plan. In keeping with the company's aggressive pension fund investment strategies (investments include international securities) of achieving maximum returns through diversification, the real estate was incorporated as an "approved asset". Halliburton maintains a "flexible" policy towards their real estate allocation which in theory may range from 0 to as high as 10%. However, very little new money has been allocated to this asset class over the past several years. The fund contains a significant holding in mortgage securities which combines a desire for a real estate diversification vehicle without compromising the need to maintain a more liquid fixed income asset within the portfolio.

Halliburton also sponsors a 401(k) commingled fund consisting of Guaranteed Income Contract (GICs), Bank Income Contracts (BICs), bonds and equities. The total asset value of this fund is approximately \$1 billion. Halliburton's employees have the option of investing their personal contributions within this plan or the primary profit-sharing fund. To date the 401(k) investment fund is devoid of any

* Halliburton also maintains a defined benefit plan of similar size ()

real estate investment vehicles. It has been Halliburton's experience that, over time, the more aggressively managed employer-directed investment fund has produced significantly higher returns than the far more conservatively invested 401(k) plan.

The sheer size of Halliburton's fund investment in other liquid assets mitigates the impediments of liquidity and valuation in terms of the real estate holdings. This leads to the observation that the perceived impediments to real estate may be a function of plan size and degree of diversification and can be minimized as both variables increase. Confidence in this observation is gained through Halliburton's own experience: In the process of deciding to maintain the real estate holdings of the various incorporated plans, discussions focused on the liquidity and valuation problems of the assets. The concern faded with time as it was demonstrated that the fund's position in other holdings compensated for the liquidity requirements of the real estate component. It is important to note the high degree of confidence Halliburton's employees demonstrate for the performance of the fund: It has been Halliburton's experience that given the choice most employees prefer to maintain their assets in the fund with many retaining their account through retirement. The longer vestment periods (as opposed to the 0 to 5 year range of many defined contribution plans) and greater asset allocation of the more

liquid components of the portfolio also combine to reduce the need to maintain maximum liquidity within the fund. Valuation of the fund is compiled monthly and is based upon the independent aggregated valuation of the underlying asset components.

Table 3.2

Halliburton Investment Portfolio

Guaranteed Investment Contracts	42%
Stock Fund	28
Bond Fund	19
Cash Instruments	5
Other	3
Real Estate	2
Mortgage Pool (GNMA)	<u>1</u>
	100%

Case 2: Pension Advisory Firm

For the New England, management of defined contribution plans as advisor and fiduciary creates special challenges. The New England has long specialized in managing the portfolios of smaller pension funds, many of whom now sponsor a defined contribution plan. While the New England does manage several 401(k) accounts none had a real estate component within their portfolios. The portfolio structure of a client with an employer-directed defined contribution plan did, however, maintain a significant real estate allocation as a function of the overall investment strategy. Again, as in the case of Halliburton, this client sponsored two investment options. The first level involved a profit-sharing plan in which the employer's contribution was directed into an employer-sponsored investment fund. The second-level is a 401(k) savings plan which offers as many as five different employee-directed investment options, including equity mutual funds, GIC funds, cash and fixed income instruments.

The profit-sharing investment fund is a multi-tier portfolio that seeks to meet several investment goals:

- 1) Liquidity through cash instruments.
- 2) Guarantee of principle through fixed income bond funds.

- 3) Increased returns through equities investment.
- 4) Overall lower volatility through the real estate component [48].

The New England's portfolio management style reflects the classic principles of modern portfolio theory which seeks to minimize overall portfolio risk while maximizing returns through diversification of assets of low correlation. The fund's portfolio mix maintains an even 20% allocation of each asset class within the portfolio. The participants share of the fund is again represented in a unitized valuation. Liquidity concerns are answered through the cash and equities portion of the portfolio. The real

Table 3.3

The New England

Structured Portfolio

Cash Account	20%
Stock Account	20%
Bond Fund	20%
GIC Fund	20%
Property Fund (Commingled)	20%

estate component is a mix of commingled open-end real estate funds. Valuation of this asset is managed the respective sponsors of the realty funds. As liquidity is more restricted in this asset class (there are at present no securitized REIT investments), this investment class tends to be a stable element within the portfolio. The New England aggressively maintains an even distribution of the portfolio's assets either directing incoming contributions to those asset components that are under-represented or shifting funds out of assets that they feel are over-represented due to temporary market fluctuations.

Unlike Halliburton, the New England client offers the employer-directed fund as an option the participants may elect to have employer's contribution directed to the 401(k) plan. Participants may also switch funds, however, they are limited to one withdrawal period per year. In this way the New England is able to more easily anticipate liquidity needs and adjust the portfolio accordingly. The New England is a strong believer in the importance of maintaining a real estate component within a portfolio due to its negative correlation with other assets. In their view real estate is a higher risk more volatile asset and thus should not represent any more than 20% of any portfolio.

From the analysis of these two defined contribution plans, the common characteristics that allowed for the

assimilation of real estate investment within their funds include:

- 1) The fact that both are employer-directed, long-term oriented funds.
- 2) Vestment periods were limited to a minimum of 5 years.
- 3) Liquidity limitations were mitigated through the structure of the portfolio to absorb unanticipated liquidity needs and restricted withdrawal options.
- 4) Both funds focused on diversification to maximize portfolio returns.

One of the key aspects of these defined contribution plans that allowed for their long-term orientation was the willingness of the sponsors to accept the liability risk of portfolio performance on behalf of their employees. While Halliburton has come to view real estate as an "approved" asset for diversification, New England's investment strategy, based upon Modern Portfolio Theory, considers real estate as an important asset allocation to reduce overall portfolio volatility.

3.3 Real Estate Vehicles for 401(k) Plans

The viability of real estate investment in defined contribution 401(k) plans is less apparent than it is in employer-directed defined contribution funds

Rather than a unique separate fund, 401(k) plans

consist of many separate accounts held in trust at the direction and benefit of the individual plan participant. As previously discussed, vestment periods can range anywhere from 0 to 5 years . While most 401(k) plans restrict a participants ability to transfer funds between options to an annual choice, many plans allow these changes to take place as often as every quarter. IRS regulations require that 401(k) plans be valued on a daily basis and fund transfers or withdrawals must be valued on the day of the transaction order.

For most real estate vehicles the requirement for immediate and full valuation is prohibitive. Commingled open-funds, one of the most popular vehicles for pension fund investment, typically require a 90 day delay in processing a withdrawal order and valuation occurs upon the actual withdrawal date [49]. Thus the participant's investment value is vulnerable to downside correction during the required processing period. The critical consideration of this potential downside exposure is that the plan sponsor may be fully liable for any losses incurred by plan participants due to the inability to provide immediate liquidity of the fund. The potential risk to the plan sponsor for liabilities arising from account processing delays is a major motivation for providing conservative, highly liquid options to a 401(k) plan participant. The liquidity issue complicates the valuation process for real

estate investments. Real estate is primarily valued through an appraisal process that is as much a craft as a science. The appraisal process generally involves an investment of time and daily evaluations can only be effected through a combination of compiled data and subjective assumption.

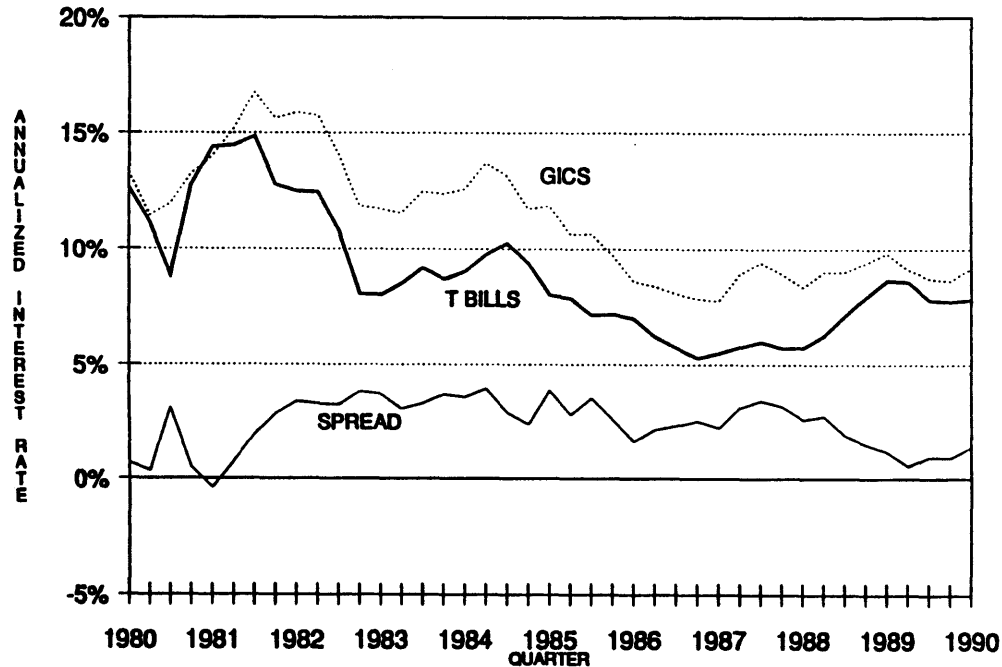
Before analyzing the alternative real estate investment options available for 401(k) plans, it is important to have an understanding of the qualities of the investment vehicles now attracting the majority of funds from the 401(k) plans. Although a detailed analysis of these investment alternatives is beyond the scope of this thesis, a brief synopsis of the advantages and disadvantages of the most popular investments will facilitate an understanding for the impediments and challenges of creating real estate options for these plans.

While many real estate investment vehicles create liquidity and valuation problems for 401(k) plans it should be noted that some of the more popular investments for these plans have limitations of their own. The common factor for these funds concern some form of guarantee for principal and interest. The safest most liquid instruments are cash instruments such as treasury bills, short-term treasury notes and CDs. Of course the trade-off for the low risk of these instruments is their relatively low returns.

Offering a slightly higher risk premium are Guaranteed Investment contracts (GICs). Nearly 70 percent of 401(k)

plans are invested to some degree in these instruments. GICs function much like a certificate of deposit (CD) offered by a bank. Like a CD, a GIC offers a guaranteed rate of return and guarantee of principal over a specified period of time. Historically, GICs have returned one half to one and one half percentage points over U.S. treasury yields (Figure 3.1). GICs offer the advantage of some limited withdrawal flexibility and the record for meeting obligations has been in the 97 percent range [50]. The limits to this liquidity feature lies in the withdrawal of the investment or transfer of funds prior to the maturity date of the instrument. At this point the principle may not be realized as the contract is often sold at "market-value" upon early withdrawal. Should an investment be withdrawn during a period of high interest rates the principle may be affected much like the investment value of a bond in which the fixed rate of the instrument forces the principle to be discounted in order to maintain competitive yields. "Market-value" provisions in the GIC may apply to other types of transfers, particularly in cases of transfers to competing funds, or even benefit withdrawals such as loans, which the insurer may not feel confident underwriting for book-value payment [51]. Provisions can be made to assure the withdrawal of funds at book-value, however, the cost to this may be lower than market rates earned on the principle [52].

Figure 3.1
Historical Performance of GIC vs T-Bill



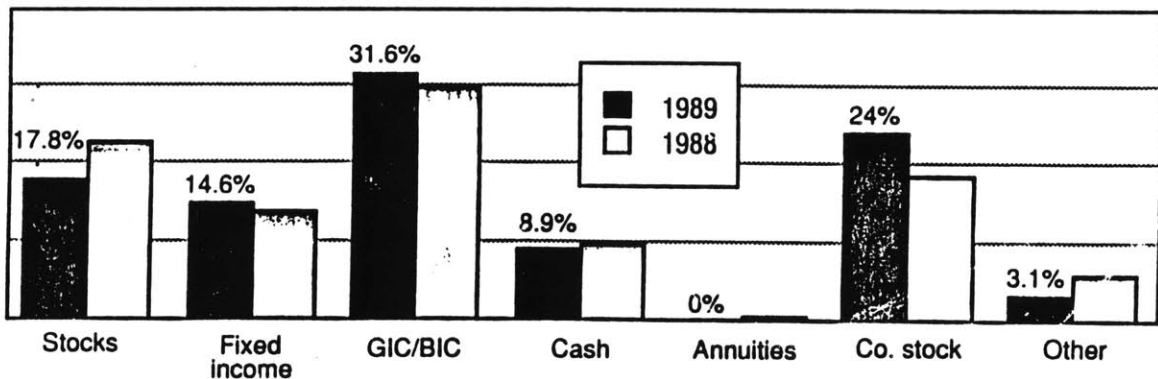
A close competitor to GICs are Bank Interest Contracts (BICs). In contrast to GICs, BICs offer the advantage the principle being FDIC insured to \$ 100 thousand more than exceeding the average account balance of a 401(k) participant.

Bonds and equities round out the universe of investments for the majority of defined contribution plans. The advantages of investments in bonds in terms of their

fixed incomes and liquidity are balanced against the risk of principle due to the sensitivity of the investments to interest rate fluctuations and market volatility. Equities and equity-pooled mutual funds while providing maximum liquidity and daily valuation also are perceived as being highly volatile investments. The employee-directed portfolio is reflective of the generally accepted profile of the individual investor as being highly risk adverse. Equity and bond investments, while an important investment class in employer-directed plans, account for less than 32 percent of 401(k) funds' invested assets (this figure does not include 24 percent of equities held through employment stock option plans (ESOPs). These equities are contributed by the employer and are not directed investments on the part of plan participants)(Figure 3.2).

Figure 3.2

Aggregate Asset Mix of Top 200 Defined Contribution Plans



* Source: Pension and Investments, January 22, 1990

As 401(k) participants have become more sophisticated in their investment strategies they are taking greater advantage of diversified mutual funds that range from aggressive growth stock funds to the more conservative high-dividend equity portfolio portfolios and combination equity/bond funds as well as money market funds [53]. The growing willingness of 401(k) participants to invest in these funds may indicate that media information, aggressive marketing by fund managers and employer sponsored investment education programs are prodding the individual investors to take more aggressive positions within their portfolios. This trend may have some positive implications for the acceptance of real estate investment vehicles within defined contribution portfolios.

One of the prime factors motivating employee participants in defined contribution plans to diversify their portfolios is the effect of interest compounding on the pre-tax contributions. The larger the sum accumulated in the earlier years of employment the greater is the impact of the compounded annual return as the fund grows toward eventual termination through retirement. In a defined benefit this is not the case. The value of the benefit for an employee accrued early in a career are much lower than those benefits accruing later. Figure 3.3 illustrates the difference in accrual patterns over the working lifetime of an employee hired at age 30 for a defined benefit plan and a

defined contribution plan that provide the same projected retirement benefit at age 65 [54]. Thus for the younger employee in a defined contribution plan more aggressive investment in the initial stages of a career may be of vital importance in assuring a sufficient retirement income.

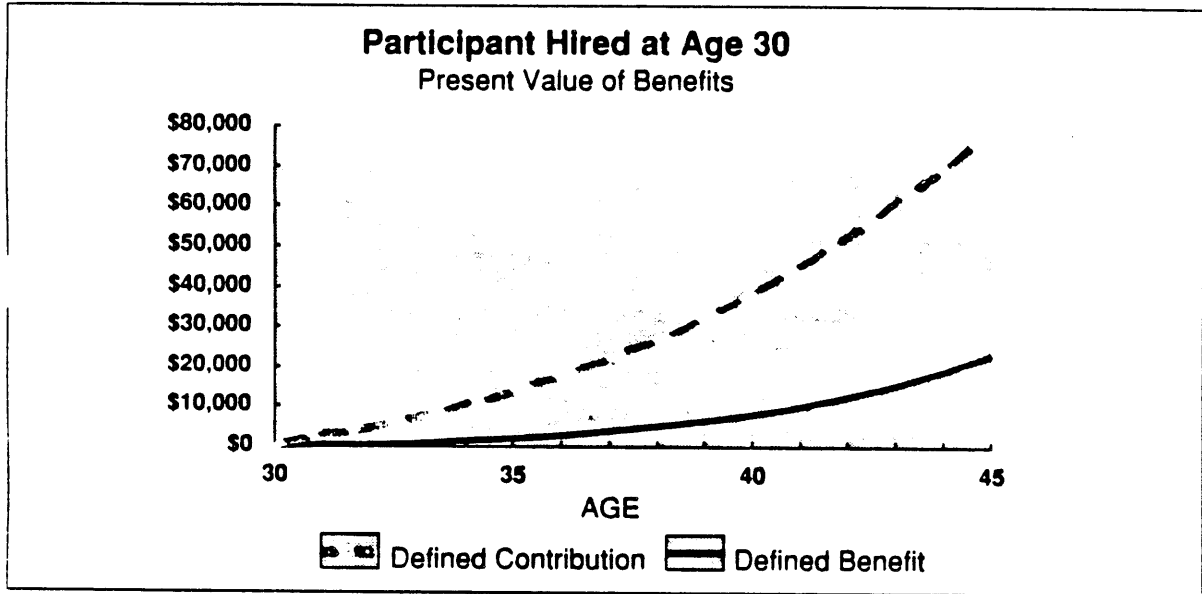
Taking a more aggressive investment approach will necessitate incorporating into a portfolio investments that promise higher returns with a trade-off of greater risk.

While a full discussion of the principles of Modern Portfolio Theory are beyond the scope of this discussion its principles can be understood by examining the advantages of diversification. Simply stated the benefits of diversification are to be gained by balancing the portfolio mix with investments incorporating different levels of risk. Risk describes the variance of the actual returns from an investment with expected returns. The greater the volatility of an investment's return the greater its risk. By mixing assets within a portfolio between conservative and risky investments, as for example between Treasury Bonds and corporate stock, overall higher return may be realized from that attained in a portfolio invested only in bonds while the risk will be lower than if fully invested in stocks. Real estate, with its demonstrated negative correlation to stock investments combined with its low volatility of returns can be an important asset class to incorporate within a diversified portfolio [55]. Figure 3.4, while

Figure 3.3

Present Value of Contributions

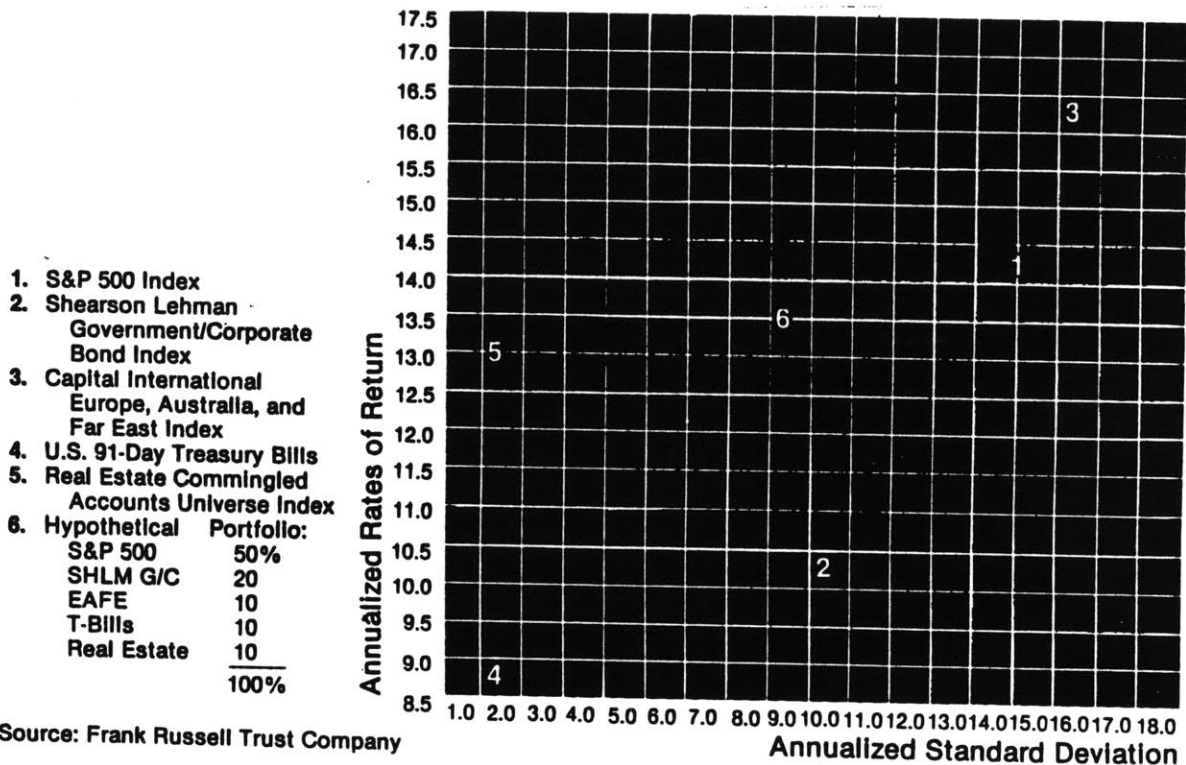
Defined Contribution v.s. Defined Benefit



* Source: Milliman & Robertson, Inc., Perspectives, September 1989

Figure 3.4**Risk-Return Performance Comparisons**

1/1/76 - 12/31/85



dated, provides an excellent illustration of the above discussion. The returns to real estate in the current market can be expected to be lower than indicated.

Real estate has only recently been accepted as an important asset class within the portfolios of traditional pension funds. Understanding real estate's role and

increasing real estate allocation to these portfolios is an ongoing process. While trained investment fund managers are still attempting to define real estate's function within the overall portfolio, the challenge to including real estate investment within risk averse 401(k) plans is exponential.

Despite the problems of liquidity and valuation several real estate fund managers and money management firms have found the potential returns from this rapidly growing market to be worth the effort. The following firms were identified as having offered real estate investment funds designed specifically for defined contribution 401(k) plans:

<u>Company</u>	<u>Fund</u>	<u>Type of Fund</u>
Met Life	DCRF	Commingled Fund
Equitable Life	PREFER	Commingled Fund
Prudential Life	PRIT Fund	Commingled Fund
Sentinel Real Estate	SRE Fund	Commingled Fund
PRA Associates	REIT Fund	Mutual Fund (REIT)
Frank Russell Trust	Russell Fund	Commingled Fund
Fidelity Trust	F. Trust Fund	Mutual Fund (REIT)
John Hancock	Variable Annuity	Mutual Fund(REIT)
Aetna Life	Prof. Annuity	Ltd Partnership Commingled Fund

All of the investment vehicles above were created and targeted specifically for defined contribution plans within

the past 5 years. The longest running fund, created in 1985 is the Russell Fund sponsored by the Frank Russell Trust Company. While the Prudential PRISA fund is among the largest and established commingled funds in the industry, its PRIT fund for defined contribution is a recent development. All others were established within the past 3 years. Therefore performance levels are difficult to measure. Current investment levels may be a function of the participant's lack of familiarity with diverse investment options. Future trends may prove quite different as participant's gain greater sophistication in portfolio diversification. To date even the most successful fund capitalization value is estimated at no more than \$50 million.

The following analysis will look at how these firms have attempted to create real estate vehicles that adapt to the limitations of the 401(k) market:

The majority of the above funds were designed to take advantage of existing commingled equity realty funds. The funds are typically open-ended unitized realty investment pools created for institutional investors. The vehicle used in creating a defined contribution realty is a separate account that buys into a percentage of the commingled fund. The percentage "owned" by the separate account is then distributed to a pool of investors in the form of shares. Thus the separate defined contribution fund is "piggy-

backed" onto the original fund. Securitization of the separate fund provides a vehicle for ownership into the primary account by individual investors and smaller funds that would otherwise be excluded due to the high minimum investment requirements.

Metropolitan Life appears to deviate from this investment structure in that its DCREF account is based upon underlying real estate assets owned and managed "in-house" by the firm. Similar to the above investment vehicles the DCREF account represents a securitized interest in the value of those holdings. Unlike other funds Metropolitan's DCREF was created specifically for defined contribution plans. The fund invests in its own separate portfolio of real estate.

Liquidity is the primary concern faced by these firms as no true market exists for these securities outside the fund. All the firms researched managed the liquidity issue in at least one of the following ways:

1) Time inflows with designated withdrawal periods:

To match withdrawal requirements the fund is structured such that withdrawals and contributions are timed to coincide. In ordinary conditions the net inflows will be sufficient to match outflows, however, in unusual periods of heavy liquidation demand inflows may be sufficient. Generally this "timed" liquidity is combined with a buffer

period in which inflows are parked in a cash account and funded investment account during the next allowable contribution period. However, the participant investment reflects the primary accounts valuation. This structure is often utilized by employer-directed funds which impose stricter withdrawal limitations upon their funds. In these cases the real estate investment represents a percentage of an overall portfolio. Ownership in the fund is structured much like a mutual fund and the return is a blended rate.

2) Maintain a portion of the funds assets in cash instruments:

The downside of handling liquidity through this method is that while it helps to ensure liquidity the investor is not getting full real estate value for his or her investment. In other words, only a portion of an investment is earning returns from real estate, at least part of the investment is earning no better than the risk-free rate. This might be viewed as the cost of liquidity. Typically the accounts hold 15 to 25 percent of assets in cash instruments. Equitable's PREFER account and the Frank Russell fund maintain this structure as the primary defense against unanticipated withdrawal.

3) Repurchase stock:

Upon withdrawal demand the plan sponsor may elect to repurchase the stock of the participant based upon "market" value which is typically a function of the cash flow and valuation of the property held in the primary account. The advantage to this approach is that it does provide the full value of the participants investment while ensuring liquidity. In periods of extraordinary withdrawals the company may not have sufficient reserves to repurchase all the shares offered for reversion. Due to the lack of an auction market, valuation of shares is undertaken by the sponsoring firm. The potential conflict of interest has led firms to seek Department of Labor approval for this approach [56]. MET Life guarantees the repurchase of stock to assure liquidity for its fund's investors.

4) Portion of account invested in REITs or REIT funds:

Prudential utilizes this approach in handling the funds liquidity needs. The advantage to this approach is that REITs have as their underlying base real property. In this way the investment in Prudential's PRIT fund is, in effect, an all real estate investment. However, REITs are bought and sold on the public market. For Prudential to meet unexpectedly high withdrawal demands could result in Prudential taking a loss on their investment in order

to cash out shares during a period in which the REIT market is in a downward cycle. It is anticipated that Prudential through its extensive assets would utilize lines of credit to avoid taking short-term losses on its REIT fund.

5) Lines of Credit:

Any of the firms above could be expected to utilize their own resources to secure lines of credit to cover liquidity needs of their funds. Met Life, with the real estate assets of the fund directly owned by the company, utilizes this method as policy in covering its guarantee to repurchase stock for investor seeking to cash-out of the investment. Equitable Life was also utilizes the underlying assets of its PRIME fund through a line of credit to ensure its ability to cover the liquidity needs of its Prefer Account.

6) REIT mutual funds:

The sponsors of these funds have mitigated the liquidity risks simply by investing in securities that are traded and valued daily on the public market. The only real limitation to the REIT funds is the issue of the limited capitalization of REIT funds available and the determination of the quality of the underlying assets of the REIT funds. There are typically no withdrawal

restrictions with these mutual funds, although investors may suffer principle loss in down markets due to the higher volatility of the issues as opposed the securitized accounts that are based on the underlying assets of the commingled equity realty funds.

Valuation for these funds is a difficult process that under ERISA regulations must be done on a minimum quarterly basis with the investors having access to daily valuation of their investment. Most fund managers value their commingled funds on an annual basis and quarterly valuation is a function of that valuation combined with assessments of cash flow and market conditions.

It is the issue of complexity and expense for providing daily valuation information that limits fund sponsorship to the largest realty firms. REITs of course are valued on the public market and valuation readily available. However there is a question of whether or not REITs are a true real estate investment or simply a common stock issue subject to the vagaries of the market rather than valued on their underlying assets. Also, REITs are generally valued at a discount from net asset value, a process that takes into account management expense and volatility, thus valuation may fluctuate daily which may be a viewed negatively by a risk averse participant in a 401(k) plan.

Perhaps among the most intriguing questions takes the

form of: Who is the individual investor and what are the characteristics of this class of investor that will dictate the success or lack of success for those firms attempting to attract the investment dollars from this market? Is it, in fact, a single market or a group of sub-markets with very different investment profiles?

The following chapter attempts to identify the investment characteristics of the individual investor within 401(k) plans. The thesis being that there may be classes of investors within defined contribution plans with very different needs. Identifying these groups may facilitate the design of innovative approaches to marketing real estate investment vehicles which may increase the attraction of the asset class for these investors.

Chapter 4

4.1 Overview of 401(k) Real Estate Investment

Advisory firms have not had great success in attracting investment funds from 401(k) plans for real estate. Real estate advisors and fund managers who perceived a new and growing source of pension investment capital created vehicles that borrowed from their experiences with the traditional defined benefit plans. One example being Metropolitan Life who in anticipated a growing investment market and created a commingled fund for 401(k) plans. A complicated and expensive undertaking Met Life's 401(k) account has met with the same luke-warm response from 401(k) investors as already encountered by Equitable and Prudential. None of the firms sponsoring 401(k) real estate investment vehicles has attracted more than \$50 million in assets. The industry perception seemed to be that the funds lying within the individual accounts of the 401(k) plans would represent a long-term retirement-oriented source of capital much like that of traditional pension plans. This assumption lead to the creation of real estate investment vehicles that were typically modified versions of currently available investment funds. The modifications of the investment vehicle were designed to meet the specialized liquidity and valuation requirements of these accounts.

While they have overcome some of the structural impediments of 401(k) plans, there has not been a corresponding growth in pension fund investment from these plans into real estate. What growth there has been is minuscule in scope (table 4.1). REIT mutual funds which appeared to possess some immediate advantages in meeting the requirements for liquidity and valuation have not proven any more successful in becoming a part of the 401(k) asset pool than other forms of real estate investments. Certainly current real estate market conditions can not be ignored as a negative influence on the attractiveness of real estate as an investment option. Yet employer-directed defined contribution plans investment in real estate has continued to be an accepted component of their overall investment portfolios (refer to Halliburton). When given the option, many employees have elected to continue to contribute to these diversified funds. Therefore it cannot be said that real estate when included within an investment option necessarily precludes that option from 401(k) investment - even when the investment is far more restrictive due to its presence.

4.2 The Investment Option Decision Process

Innovative real estate firms began to design investment vehicles for 401(k) pension funds in response to the explosive growth of these plans since 1983. Surprisingly

Table 4.1

Real Estate Investment as
Percentage of 401(k) Portfolio

	<u>401(k)</u>	<u>Profit-Sharing</u>
1985	0.0%	1.5%
1986	0.1%	0.9%
1987	0.2%	1.6%
1988	0.1%	2.4%
1989	0.5%	1.3%

source: Greenwich Associates

however, very little research seems to have been undertaken to try and analyze the profile of the participants within the 401(k) plans to measure how these vehicles met the investment criteria of the employee-directed 401(k) plans. There also appears to be very little understanding for how these options come to be selected for inclusion within the various 401(k) plans.

An analysis of the process that leads to the eventual choice of investment options to be offered in the plans provides some basis for questioning the premise that participants drive the choice of investment options within 401(k) plans. The view that 401(k) plans are necessarily conservative due to the investment nature of the individual participants may be partly a self-fulfilling prophesy. It is, after all, the plan sponsor that provides the investment options to the participants [57]. In order to

save on the degree of complexity and expense in administering the 401(k) plans sponsors often attempt to limit the number of investment options offered within the plan to usually no more than three [58]. The plan sponsor's decision criteria for selecting the investment options appear to be the result of a complex set of issues not the least of which considers liability and fiduciary responsibility. Directly advising plan participants on investment choices is avoided due to the potential liability issue. New regulations under section 404(c) of ERISA indemnifying plan sponsors for liability resulting from plan participant actions may encourage bolder advisement approaches. Such a result could encourage more sophisticated investment decisions from plan participants. For the time being investment information is disseminated through means of brochures and investment media releases which describe the various options with perhaps a simplified economic analysis. The general attitude appears to be "Here are your choices, here is some information on those choices, make your choices, live with your choices". In the final analysis marketing an investment instrument to 401(k) plans becomes a two tiered approach: First the plan sponsor must be convinced of the value in offering the option, and secondly, the plan participants must be reached in a way that informs them of the value of including an option within their portfolios.

In 401(k) plans it is the participant who must make, and is solely responsible for, the investment choice. Understanding the motivations behind the individual investor's choices would contribute greatly to deciphering if 401(k) funds should be relegated to fixed-income instruments and indexed stock funds. The question becomes: Should creative vehicles for real estate investment be targeted to more traditional and sophisticated private and public pension fund portfolios? To answer that question the following analysis examines the characteristics of the 401(k) market that renders its investment patterns uniquely different from traditional pension funds.

4.2 The Individual Investor: Characteristics

"To sum up the typical profile of an individual investor, I would suggest that they represent the most diverse type of investor group that exist today. They come with various characteristics of income, wealth, age, social status, and investment savvy. They are a moving target through time whose circumstances change and they have some very unique psychological differences. There may be some common factors that we can key in on when we allocate their assets to various investments" [59].

Extensive research on the characteristics of the individual investor is limited and much of it quite dated. Despite the fact that as of 1985 financial assets of private households amounted to over \$15 trillion and accounted for \$2.4 trillion or 30 percent of credit market debt [60] not much is truly understood regarding the motivations behind the individual's investment patterns.

A review of the research undertaken over the past 15 years does tend to confirm several patterns to the individual's investment profile. Among the key elements of this research is the evidence that many individuals apparently do not understand the fundamental principles underlying the concept of risk [61]. The surprising fact behind this observation is that individual investors have historically been an important, although declining [62], factor in the investment markets. Despite the decline in total equity ownership individual investors maintained corporate stock portfolios totaling \$1.8 trillion [63] as of 1985.

Research indicates that the individual investor is not so much "risk-averse" as the investor is "loss-averse" [64]. The evidence demonstrates that left to the individual's own devices "loss avoidance" is the primary factor in financial decision-making. Among the most difficult notions that have to be overcome in creating vehicles for individual investment concerns the avoidance of viewing the individual

investor group as sharing common traits with the more easily identified characteristics of institutional investors. One particularly relevant analysis used the unique approach of contrasting the application of the concept of risk between the individual investor with that of the corporate pension fund:

"However, I would argue that the real individual is measurably different from either the economic person or the corporate fund. He has a different economic and psychological reality. These two factors jointly determine an approach that ought to be different, particularly since the economics of the real individual are so different from that said to be true for the corporate pension fund. The real individual investor is more fragile and has a much higher risk profile than the corporate pension fund. Therefore he or she probably needs a lot more stability in the normal situation than the pension fund. This notion of fragility suggests that whereas volatility, predictability, or standard deviation or return are the appropriate risk concepts to use for the corporate pension fund analysis, actual loss potential is a much more relevant notion for individual." [65]

Several research findings describe the individual investor as being preoccupied with "loss" not overall

"risk". If this is so the next logical question becomes: How does the individual investor deal with loss avoidance in his portfolio? An interesting finding in this regard demonstrates that many individual investors understand to some degree the concept of diversification. However, in attempting to follow the old adage "don't put all your eggs in one basket" they practice "diversification" in a naive fashion that in fact leads to a core concentration of investment. In one study 88 percent of individual investors surveyed had portfolios of less than 10 separate issues. All considered themselves "risk averse" and their portfolios diversified. In fact upon examination an "inordinate number of portfolios were found to be extremely undiversified and thus "more risky than their owner's attitudes warranted" [66].

If the individual investor is in fact so "loss-averse" what motivates the choice for the inclusion of volatile therefore "risky" investments in corporate stock? Part of the answer appears to lie in the information base of most investors. Individuals seem to find the process of investment-making an overwhelming experience. A general review of the literature describes the decision-making process as informal at best and one in which the individual investor lacks the knowledge and data required to make fully informed investment decisions. They have a business life, a family life, and time remaining is limited. "For the small

investor, investment selection may become almost a hit-and-run operation. Reliance on a broker, on the financial press and on one or more services seem minimal" [67].

From the preceding analysis a picture of the individual investor begins to emerge. The individual investor is preoccupied by the potential for "loss" not with the more sophisticated concept of "risk". The investor understands diversification but generally fails to practice it. With severe constraints on time and limited knowledge, the individual will tend to invest in the most convenient instruments that limit the potential for capital loss. In contrast to the extreme aversion for "loss" the individual investor will often make an investment decision and then "forget" about it regardless of the loss potential, thus the motivation for safe investments. However, and most importantly, the individual investor demonstrates a willingness to listen to advice when he can get it, yet left to his own devices will make the investment process as easy as possible.

How does this analysis shed any light on the current trend in investments within 401(k) plans? Table 4.2 clearly demonstrates a concentration of investment within two options: 1) employer stock and, 2) fixed income assets especially Guaranteed Investment Contracts. The paradox of the heavy concentration in employer stock year in and year out could be interpreted as a demonstration of the

disinclination for investors to switch funds out of investment options even if it is within their interest to do so. Diversification is sacrificed for convenience. Thus the self-fulfilling prophesy alluded to earlier: Plan sponsors limit the advice to 401 (k) plan participants and the result, as predicted by the research, a heavy concentration of "safe" fixed income assets with minimal risk for loss of capital. Alternatively the concentration of employer stock is a manifestation of the paradoxical situation where risk averse investors maintain essentially risk oriented portfolios. There is no question that, for the plan sponsor, liability remains the primary impediment to providing investment advice to 401(k) participants.

Having looked at the individual investor on a macro-level to explain current investment patterns within 401(k) plans the analysis will now focus on the more micro-level by analyzing the characteristics of the investor groups within the 401(k) plans. The purpose of this analysis will be to identify what group of investors within 401(k) might be focused upon as a source of capital flow into real estate investment. Secondary to this finding will be a discussion of the overall potential for capital investment from this market segment.

Table 4.2**Historical Asset Allocation
Within 401(K) plans**

Type of Investment	1986+	1987	1988	1989
Common Stocks	13.1%			
Active		12.4%	10.5%	9.8%
Company Stock	29.3%	36.5%	24.4%	23.7%
Passive		2.7%	8.4%	6.3%
Total Domestic Stocks	42.4%	51.6%	43.3%	39.8%
International Stocks				
Active		0.0%	0.1%	0.5%
Passive		0.0%	0.0%	0.0%
Total International Stocks	0.0%	0.0%	0.1%	0.5%
Bonds				
Active		5.1%	3.9%	2.7%
Immunized or dedicated		*%	0.1%	0.0%
Other Passive		.9%	1.4%	0.6%
Total Bonds	5.1%	6.0%	5.4%	3.3%
Guaranteed investment Contracts	37.7%	36.3%	43.9%	47.6%
Equity real estate	0.0%	0.1%	0.1%	0.5%
Cash and short-term securities	9.5%	8.3%	5.9%	6.3%
Other	5.3%	2.8%	1.3%	1.9%

† Percentages for 1986 not broken out

* Mean is less than 0.5%

** Source: Greenwich Associates: Survey of large corporate plans

The method of analysis in the identification the various investor groups within 401(k) plans utilizes the concept of investment stages within the investor's professional life cycle [68]. By relying on income statistics and demographic trends investor patterns should emerge that will provide a profile of those segments for whom real estate investment could and, perhaps, should be a viable investment option.

4.3 The Professional Life-Cycle

Several studies undertaken to understand individual investment patterns have taken the approach of considering three key stages in the professional life cycle: 1) The young investor; 2) the individual in mid-career, and; c) retirement age [69]. Most analysts seem to agree that the young investors should maintain moderately conservative investment portfolios. The reasoning is that at this stage of life insufficient savings reserves have been built up to buffer unexpected losses in capital investment and set-backs could be financially devastating in the short-term. With youth on their side small reversals could be absorbed as increased capital bases allow for more aggressive portfolios.

The next stage typically describes the professional between the ages of 35 and 50. Higher earnings should be

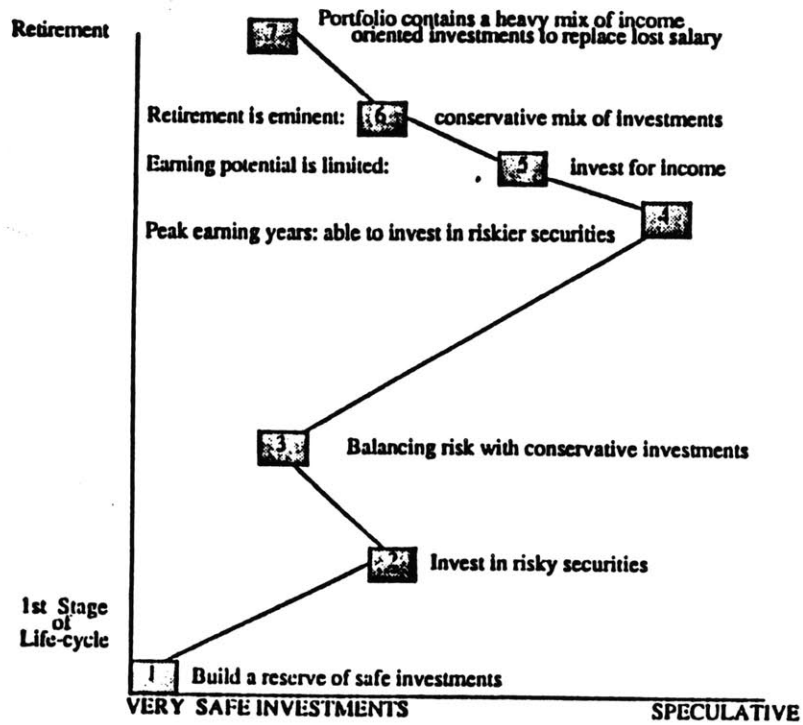
realized and greater financial mobility attained as savings are built-up and liabilities such as mortgages are paid down. The investor at this stage is generally more financially astute and can afford to take far more aggressive investment positions. Investments in stocks and bonds should compliment more conservative investments. Diversification should be a priority as confidence in their earning capacity and their ability to replace losses will allow the investor to seek higher returns commensurate with higher risk.

As the individual moves towards retirement loss aversion becomes greater. Highly conservative investment vehicles will again dominate the investment portfolio. Figure 4.1 demonstrates the investment stages in greater detail [70]. It clearly delineates the stages of investment that both begin and end in conservative portfolios. Through this chart the investor group that would be most likely to consider real estate investments are then identified as being in stages 2 through 5. The market segment that would belong to this group would most likely be defined as those between the ages of 35 and 55.

The investment potential of these participants in 401(k) plan is significant. It is within this age cohort that peak earnings for households occurs in the U.S. (Figure 4.2). With the increasing levels of education (Figure 4.3)

Figure 4.1

The Seven Stages of Portfolio Investment



* Source: Gannon and Weagley, Investor Portfolio Allocation: The Demand for Risk, American Council on Consumer Interest, 35th Annual Conference, March 29-April 1 1989.

the income potential of this group can be expected to increase significantly. This is important in 401(k) investment as contribution totals are directly related to income levels (table 4.3 and 4.4): The potential investment pool increasing with employer contribution.

4.4 "Established Professional" Investors

The importance of the this participant group within 401(k) plans is evident by tables 4.3 and 4.4. The majority of the higher average incomes within the range of \$20 thousand to \$50 thousand fall in the range of this investor group. Of the \$19.2 billion contributed by the private sector to 401(k) plans this group accounted for over \$12 billion alone. This investor group make significant annual deposits to their 401(k) plans. In 1988, 55 percent of those earning more than \$50 thousand contributed \$2 thousand to \$5 thousand, and 19 percent contributed over \$5 thousand. Among those earning \$30 thousand to \$50 thousand, 41 percent made annual contributions ranging from \$2 thousand to \$5 thousand [71]. These amounts are significant in that they represents nearly 10 percent of the average salary.

Over half of those employees identified as professional and administrative now participate in 401(k) plans (table 4.5). Figure 4.3 indicates the emphasis on education for these professions as evidence by the number of employees

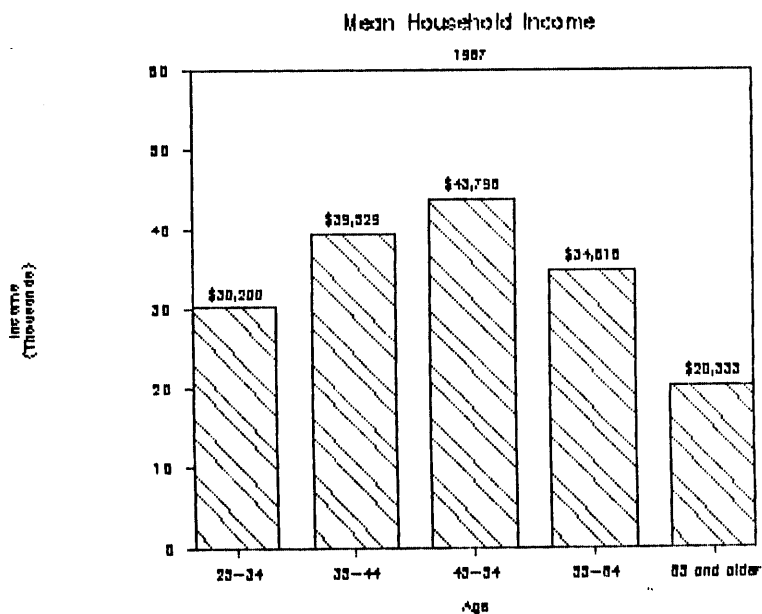
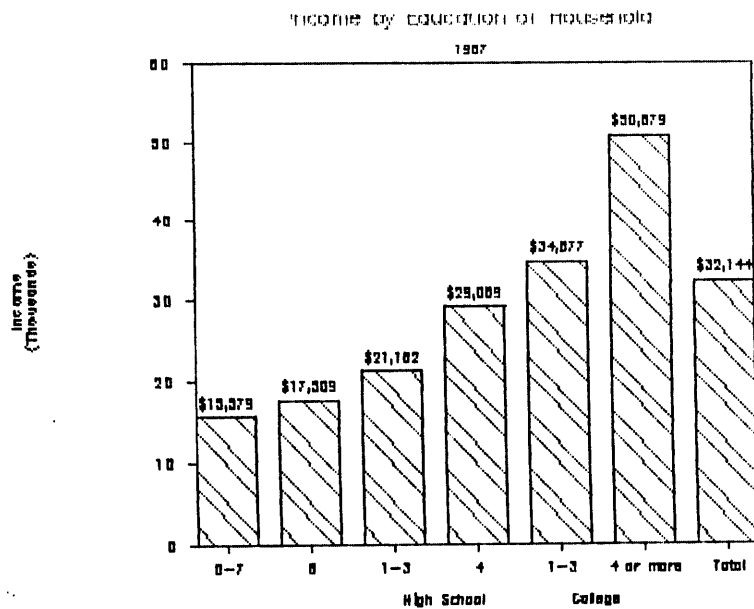
Figure 4.2**Average Income of Households By Age****Figure 4.3****Average Income of Households by Education**

Table 4.3**Distribution of Aggregate Annual 401(k) Contributions, Annual Earnings and Sector, Nonagricultural Wage and Salary Workers: 1988**

Annual Contributions	Total (In millions)	Public Sector		Private Sector	
		(in millions)	(percentage)	(in millions)	(percentage)
Total	\$24,135	\$4,811	100.0%	\$19,324	100.0%
\$1-\$4,999	^c	^c	^c	^c	^c
\$5,000-\$9,999	135	39	0.8	97	0.5
\$10,000-\$14,999	730	178	3.7	552	2.9
\$15,000-\$19,999	1,609	323	6.7	1,287	6.7
\$20,000-\$24,999	2,614	591	12.3	2,023	10.5
\$25,000-\$29,999	2,880	695	14.4	2,185	11.3
\$30,000-\$49,999	10,673	2,172	45.1	8,500	44.0
\$50,000 +	5,482	811	16.9	4,671	24.2

Source: EBRI tabulations of the May 1988 Current Population Survey employee benefit supplement.

^aAggregate annual contributions were estimated by multiplying the reported contribution rate for each individual by annual earnings. Individual contributions for all workers reporting the necessary data were then aggregated. Individuals who did not report earnings or contribution rates are excluded. Therefore, these estimates may be biased downward. Data include only employee contributions.

^bAnnual earnings were estimated by multiplying reported weekly earnings by reported weeks normally worked per year.

^cSample too small to be statistically reliable.

Table 4.4**Average Annual 401(k) Contributions^a by Annual Earnings^b and Sector, Nonagricultural Wage and Salary Workers, May 1988**

Personal Earnings	Average Contributions		
	Total	Private	Public
All Participants ^c	\$2,000	\$2,000	\$2,000
Less than \$10,000	400	400	500
\$10,000-\$19,999	1,000	900	1,000
\$20,000-\$29,999	1,500	1,500	1,500
\$30,000-\$49,999	2,600	2,500	2,900
\$50,000 +	3,500	3,500	3,700

Source: EBRI tabulations of the May 1988 Current Population Survey employee benefit supplement.

^aAnnual contributions were estimated by multiplying the reported contribution rate by earnings. Individual contributions for all workers reporting the necessary data were aggregated and divided by the number of workers reporting to determine the average. Data include only employee contributions. Averages were then rounded to the nearest \$100.

^bAnnual earnings were estimated by multiplying reported weekly earnings by reported weeks normally worked per year.

^cExcludes respondents who reported no earnings.

Table 4.5

**Percentage of Full-Time Employees Participating 401 (k)
Arrangements, Medium and Large Establishments, 1988**

Items	All Employees	Professional/ Administrative Employees	Technical/ Clerical Employees	Production Service Employees
Percentage of all Employees with 401(k) Arrangements	36%	51%	43%	24%

* Source: U.S. Dept. of Labor, Bureau of Labor Statistics, Employee Benefits in Medium and Large Firms, 1988

Figure 4.4
Occupation of Employed Civilians,
by Educational Attainment: 1988

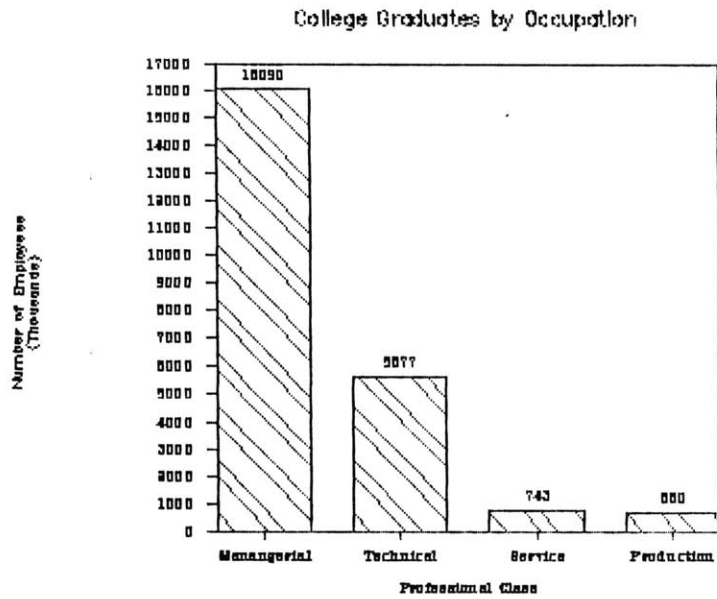
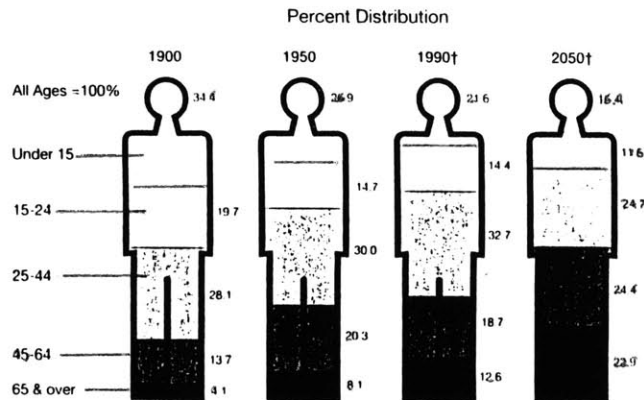


Figure 4.5
Population Trends



† Includes: Not reported.
 ‡ Excludes: Armed Forces, Overseas.
 Source: U.S. Bureau of the Census.

within this category that have attained 4 or more years of college education. Such high educational levels provide a knowledgeable investor base with the sophistication to make rational and informed investment decisions.

The importance to this group of maximizing its returns on investments cannot be overstated (refer to table 3.6). In defined contribution plans the maximum value realized from the tax deferred benefit derives from the accumulated earnings of investments at the front end of the plan. The impact of contributions to the overall retirement plan is significantly less in the latter years of employment.

Another trend adding to the investment potential emanating from this group is demonstrated in the projection of population trends in Figure 4.5. The trend analysis demonstrates that this participant group will be among the fastest growing cohort in the population. As the number of defined contribution plans increase to cover a growing proportion of the labor force the capital invested by this group will grow to represent a vast source of investable capital. For the real estate industry, this group could form an important pool of investment dollars as they will have the sophistication, maturity and need to understand the value of diversifying their portfolios. It can be projected that with the increasing educational level of this group concurrent with the familiarity of investing within the 401(k) plans the concepts of minimizing risk to maximize

returns will displace the preoccupation with "loss" aversion.

The economic and demographic trends discussed above were utilized to estimate the potential capital flows from this market into real estate. The current potential investment from this "established professional" investor class is calculated to be the following:

$$\$12 \text{ billion} \times .05 \text{ percent} = \$600 \text{ million}$$

The current potential flow of investment capital to real estate investment as indicated above is assumes a 5 percent allocation of contributions. Based upon the growth trends both in the implementation of 401(k) plans and the demographic trends in the growth of this investor class the potential magnitude of the future flow of funds available for real estate investment is estimated to be:

$$(A \quad x \quad B) \times (C \quad x \quad D) = E$$

$$(11,219,000 \times (1.10^{10}) \times (\$1,069 \times 1.04^{10}) = \$46 \text{ billion}$$

$$\$46 \text{ billion} \times .05 = \$2.3 \text{ billion}$$

Where:

- A = The current investor pool identified as "Established Professional".
- B = Projected growth rate of this group based upon the current growth in 401(k) plans and demographic trends.
- C = Current average contribution to 401(k) by participants in this investor class.
- D = Growth in contributions based upon current average contribution and inflation.
- E = Total future contributions to 401(k) plans from the investor group.

The potential flow of investment capital into the real estate investment from 401(k) plans alone is in excess of \$2.3 billion per year within ten years. The 10 percent growth rate in the number of participants is considered conservative based upon current the 15 percent increase in 401(k) plans annually and demographic growth projections for total employees within this category of the labor market. It should be noted that this investment pool represents only those funds emanating from 401(k) pension plan and does not incorporate the investment potential of the universe of defined contribution plans. The analysis of the 401(k) plans was undertaken to demonstrate the investment potential of one segment of defined contribution plans. Therefore the combined potential capital investment source to real estate from defined contribution plans is projected to be significantly higher.

The unique advantages of real estate is that it can be structured to meet the needs of a range of investors. As demonstrated real estate has for some time been and continues to play a role within many defined contribution pension fund portfolios. While it has had limited success as an investment vehicle within 401(k) investment plans the proceeding analysis demonstrated that the potential for attracting a sizable pool of investment dollars from this investor group is significant and will be accomplished as an important investment group within the 401(k) plan grow in

size and investment sophistication.

The final chapter of this analysis discusses real estate vehicles which are considered to have the highest potential for incorporation into 401(k) pension fund portfolios. The chapter explores the features of real estate that provide advantages in attracting investment dollars. The analysis continues with a discussion of how real estate investments might be structured to meet the diverse needs of 401(k) plan participants.

Chapter 5**5.1 Criteria for Real Estate Investments: Overview**

In order to get real estate investments accepted into the portfolios of 401(k) pension plans certain criteria will have to be met. A brief outline of these criteria as identified in this analysis is presented below. A more detailed analysis of each then follows:

- 1) The investment vehicle will have to meet the minimum requirement of these plans for liquidity and valuation.

- 2) The investment must be avoid being overly complicated in its structure. Tradeoffs between risk of capital and returns on investment will have to be presented in a manner which speaks to the level of sophistication of an average investor within the targeted market segment.

- 3) The investment will have to have features that separate it from more traditional investment vehicles. In other words there must be a reason why an investor would choose an investment in real estate rather than a stock or bond.

- 4) The investor will have to be informed of real-estate's long-term advantages within an investment portfolio.

Stricter penalties on early withdrawal and greater loan restrictions imposed on the 401(k) plan will facilitate a more long-term perspective on 401(k) participants.

5.2 Criteria for Real Estate Investments: Analysis

The criteria for liquidity and valuation are perhaps the most important hurdles that real estate as an investment must deal with. The investment must be able to accommodate the possible short-term demands for liquidity that will arise even from the most long-term minded investor. Liquidity limitations can be imposed on investments within 401(k) plans as Guaranteed Investment Contracts have demonstrated. However as real estate is often perceived a riskier investment than GICs and a liquidity feature must be provided to accommodate those investors who inevitably opt to transfer funds in down cycles.

As previously discussed many firms have addressed this issue by investing a certain portion of the real estate fund in cash accounts or REITs. Another approach which might be combined with the liquidity features above would be to create investment vehicles that incorporate degrees of liquidity. Thus a stepped form of real estate fund offering degrees of liquidity could accommodate a broad range of investors within different investment life-cycles without complicating the administration of the separate accounts or

exposing the fund to liquidity runs. The advantage of this approach is that liquidity needs can be anticipated. Many GIC funds operate in this manner, especially pooled funds that invest in GICs of varying maturities. For Commingled funds valuation of investment units could be complicated by this structure as liquidity options would have to be "priced". The trade-off would be that funds can mitigate the liquidity risk by incorporating staggered intervals in which liquidity options could be exercised. The valuation of the shares with different liquidity features would be set at purchase. Thus a one time adjustment would carry through subsequent unit revaluations due to the normal management and performance of the fund. Since such a structure would create several investments vehicles within one fund without necessarily complicating the management or valuation reporting process to the investors.

Improving the valuation process of the fund itself is an issue beyond the scope of this analysis. It is one of the most controversial issues in real estate investment today and remains to be resolved. Ongoing research as well as improved data and appraisal methods may yet streamline the process. A universal issue within the real estate industry, it is, in a sense, smoothed out as a factor due to the demonstrated low volatility of real estate prices in the long-term. Prices of real estate are subject to a myriad of economic forces whose impact upon real estate values are

difficult to predict and the subject of intense research. However in the final analysis value is inevitably subjective. The down-side to low volatility is the lag in recovery. Down-cycles in real estate are extended and recovery periods often more longer-term than might be anticipated in other investment markets.

The second issue brought out by this analysis is that real estate investment vehicles must be comprehensible to the average investor. Despite the anticipated higher degree of sophistication in the targeted investor class certain realistic assumptions must be made. One is that the typical investor will not have extensive financial investment support from the plan sponsors: Real estate fund managers will have to take this education responsibility on themselves. Secondly, the average investor within the targeted market will still tend to invest in the most convenient instruments, thus, by and large the investment will have to be easily understood. Thirdly, the investment must have features that can be weighed by the investor in the risk trade-off of capital preservation and investment growth. Investments in direct-debt instruments with their exposure to interest rate and inflation risk or venture capital funds for development will most likely not be attractive options to 401(k) plans. Mortgage securities while guaranteeing principle and interest maintain a call

option risk [72]. The risk of prepayment may be difficult to communicate to participants and expose liability issues for the plan sponsors. Exercised call options may result in lower returns being realized by investors who made their investment decisions based upon long-term expected yields. The primary advantage of these securities is that they are relatively safe and liquid instruments. Pooled mortgage debt instruments that include participation features in cash-flow and reversion may also be an attractive investment vehicle for established professional investment dollars.

The third observation considers that the investor already maintains a universe of investment options to choose from. Investment in real estate will have to offer unique advantages that other options may not be able to offer. Inflation hedging is already one well known component as well as the possibility for capital appreciation and investment capital growth through cash flow dividend options. Open-end commingled equity funds, whether direct investment or in the form of a mutual fund, provide many of these advantages in an easily comprehensible form. Volatility of the units within these funds is also quite low and maintain the positive effects of negative correlation with stock and bond investments [73]. REITs however behave much like stocks as they are traded on the public market. A recent study conducted by Professor Lynne Sagalyn of the

Massachusetts Institute of technology demonstrated that the real estate securities could become highly volatile despite stable underlying cash flows [74]. Other studies of REIT performance have also demonstrated their high positive correlation with stocks [75]. While many argue that they offer investors a liquid, low-cost and diversified real estate investment vehicle for the individual investor, their high volatility offers no real advantage to investment in common stock. Combined with the fact that they are valued and sold at a discount to the REIT funds appraisal value investors will discern no particular advantage to investing in these funds. For long-term investment purposes REIT funds will appeal only to a small portion of highly sophisticated investors in 401(k) plans and not at all to plan sponsors who have the fiduciary responsibility to administering the universe of investment options. Naturally, upswings in the market coupled with positive media reinforcement produce greater investment dollars from 401(k) participants looking to make short-term gains. Again, this investment will flow into these funds to capitalize on positive short-term fundamentals. They will generally not be incorporated as long-term investments.

The final observation is one that realty fund managers will have to grapple with. This analysis has demonstrated that marketing real estate investments is a two tiered

effort. Both the plan sponsor and the participant must be reached in order to communicate the value of incorporating a real estate component within 401(k) investment portfolios. Realty fund managers will have to assess if the cost of tapping the potential investment funds of 401(k) plans in terms of sponsoring investment seminars, issuing publications and various other informational programs will pay off in attracting investment capital. Effective communication may be the key to success in attracting investment funds from the established professionals of 401(k) plans. Once attracted fund managers will also have to face the issue of liability if investment performance is disappointing.

In the final analysis the open-end commingle funds such as Metropolitan's DCREF and modified mutual funds of Prudential and Equitable's defined contribution accounts appear to be the optimum choice for 401(k) real estate investment. That they haven't been more successful can be explained in the terms of this analysis. The individual investor derives investment information from informal sources including friends and media. At the moment the press is quite negative as are general market conditions at this time. Secondly, the 401(k) plan is still in a developing stage. Much of the growth derives from replacement of defined contribution plans in which all pension fund investment decisions were far removed from the

eventual benefit recipient. Suddenly, employees find that it is they who must make the choice in this new arrangement. They tend to be very conservative and will gravitate towards conservative capital preserving investments. As the "established professional" investor confronts the need to move more aggressively in maximizing portfolio returns this group will be receptive to incorporating real estate investments as an overall part of their investment strategy for retirement. Real Estate firms should be targeting this group now in gaining a foothold in 401(k) pension fund investment market.

The research findings from this analysis, gained through interviews and literature review, indicated that no concerted effort has actually been made to target the "established professional" as the optimum source of 401(k) capital for real estate investment. It appears that real estate firms and realty fund managers have approached the 401(k) market much as they had the traditional defined benefit pension plan, that is, as a monolithic source of capital. What they have found instead is a far more complex universe of individual investment accounts that aggregated together represent a significant source of investment capital. To access that capital a new approach will have to be taken: One that incorporates a marketing strategy more akin to the retail investment market. It will be interesting to see if the results of this more sophisticated approach changes the performance of these funds.

Conclusion

This analysis has demonstrated that 401(K) pension plans represent a growing pool of investment funds controlled not by highly trained investment analysts but by individual investors of diverse professional backgrounds, personalities and economic needs. In the absence of thoughtful professional advisement this group of investors, lacking the time for careful investment analysis and of a general "loss" averse inclination, will direct their investment dollars into highly conservative and capital preserving instruments.

The analysis further identified a growing segment of the 401(k) investment market identified as the "established professional" that has the sophistication, excess investable capital and need to transcend the typical investor's preoccupation with "loss" aversion to a more appropriate diversification strategy seeking to maximize returns while minimizing their overall portfolio risk. Within defined contribution plans the success of the participant's investment strategy will dictate the lifestyle that will be attained upon eventual retirement.

Real estate is for this investor group is a viable and important investment alternative. Its role in reducing the volatility of diversified portfolios is well documented and should be made available to these investors as an investment

option. "Black Monday" again exposed many defined contribution participants the volatile nature of the stock market. In one day these plans experienced a decline of over \$54 billion in the value of their stock portfolios [73]. Inflation, while held in check for the time being, is always a possibility in the future. Real estate has been demonstrated to be an effective hedge against inflation and an effective asset for reducing volatility in an investment portfolio. It has taken some time for the traditional pension funds with highly trained investment managers to accept real estate's role in an overall long-term investment strategy. Is it any wonder that the acceptance of real estate investment within 401(k) pension plans has been no less of a challenge?

The potential investment pool within 401(k) plans is expanding almost daily. Understanding the complex profile of this potential capital source through sophisticated market research and innovation may pay off by turning the tap on a new flow of investment dollars for the real estate industry. Hopefully this analysis can play a role in spurring new thinking in the planning of real estate investment strategies for the next trillion dollar pension fund market.

References

- [1] Business Week, November 6, (1989)
- [2] Employee Benefit Research Institute, April (1990),
- [3] Gray (1983), p. 22
- [4] Cohen, (1982), p.215
- [5] Ibid, p.612
- [6] Keating, Pension World, July 1983
- [7] Martin, Pension World, October 1986
- [8] Life Insurance Fact Book, 1977
- [9] ERISA, Act. 3, par. 1002.
- [10] Gray, (1982), p.19
- [11] ERISA Committee Reports, par. 5035
- [12] ERISA, Act Sec 404, par. 1107
- [13] Cohen, (1982), p. 619
- [14] ERISA, Act Sec 404(a)
- [15] Merkle, (1981), p. 19
- [16] Grey, (1982), p.55
- [17] Edwards, Real Estate Review, 1987
- [18] Ampuero, Pension World, February (1989)
- [19] Equitable, National Real Estate Investor, 1989
- [20] Opsata, Financial Planning, March (1990)
- [21] EBRI, Issue Brief 91, June (1989)
- [22] Interview, Greenwich Associates, (1990)
- [23] Hemmerick, Pensions and Investments, January (1990)
- [24] Merkle, (1981), p.19
- [25] ERISA, Act Sec 404
- [26] EBRI, Issue Brief 91, June (1989)
- [27] Ibid.
- [28] Ring, Pensions and Investments, May 21,1990
- [29] Business Week, November 6 (1989)
- [30] EBRI, Issue Brief 101, April (1990)
- [31] Ibid.
- [32] Williams, Pensions and Investments, January (1990)
- [33] Kendall, Business Journal Magazine, April (1990)
- [34] Stephen, Institutional Investor, October (1989)
- [35] Chernoff, Pensions and Investments, September (1989)
- [36] Stephen, Institutional Investor, October (1989)
- [37] Cole, Perspectives, September (1989)
- [38] Chernoff, Pensions and Investments, September (1990)
- [39] Business Week, November (1989)
- [40] EBRI, Issue Brief 101, April 1990
- [41] Hemmerick, Pensions and Investments, November 27,(1989)
- [42] EBRI, Issue Brief 91, June (1989)
- [43] Cambell, Pension World, March (1987)
- [44] EBRI, Issue Brief No. 95, October (1989)
- [45] Ibid.
- [46] Interview Halliburton, Xerox
- [47] Ibid., Halliburton

- [48] Interview, The New England
- [49] Interview, The New England
- [50] Bevis, Employee Benefits Journal, September (1987)
- [51] Ibid.
- [52] DellaGrotta, Employee Benefits Journal, December (1989)
- [53] Salisbury, Pension World, January (1988)
- [54] Cole, Perspectives, September (1989)
- [55] Zerbst, Journal of Portfolio Management, Spring (1989)
- [56] Reinbauch, Pensions and Investments, January 25,(1989)
- [57] Salisbury, Pension World, January (1988)
- [58] EBRI, Issue Brief No. 95, October 1989
- [59] Bauston, (1986)
- [60] American Financial Services, (1986)
- [61] Quattlebaum, (1986), p. 16
- [62] American Financial Services, (1986)
- [63] Blume, 1978, p.47
- [64] Quattlebaum, (1986), p. 16
- [65] Droms, (1986), p. 10
- [66] Cohen, (1982), p. 209
- [67] Cohen, (1978), p. 122
- [68] Cohen, (1982), p. 207: Blotnick, (1979), p. 1
- [69] Ibid., Cohen
- [70] American Council on Consumer Interests, (1989), p. 130
- [71] EBRI, Issue Brief No. 95, October 1989
- [72] Elebash, The Journal of Real Estate Research, Fall 1987
- [73] Edwards, Journal of Real Estate Finance, Fall (1987)
- [74] Sagalyn, Working Paper, June (1989)
- [75] Bruggeman, (1989), p.754

Bibliography

Ampuero, Marcos and Dennis Scannel, "Pension and Real Estate: Are the Game's Rules Changing?", Pension World, February (1990)

Anderson, Mary B. and Protos, Paul A., Personnel, March (1990)

Bauman, W. Scott, "Performance Objectives of Investors", Occasional Paper No. 2, The Financial Analysts Research Foundation, Charlottesville, Virginia, (1979)

Beckman, Bruce R. and Gladstone, David M. Journal of Compensation

Berman, Thomas David and Karp, Allan William, "An Analysis of an Investment Strategy for Pension Funds: Why Practice Doesn't Follow Theory", Master's Thesis, Sloan School of Management, MIT (1983)

Bevis, Charles W., "Understanding What Participants Are Guaranteed in a 401(k) Plan's GIC fund", Employee Benefits Journal, Vol. 12, No. 3, September (1987)

Blotnick, Srully, "Winning: The Psychology of Successful Investing", McGraw-Hill Book Company, N.Y., New York, (1979)

Blume, Marshall and Friend, Irwin, "The Changing Role of the Individual Investor", A Twentieth Century Fund Report, John Wiley and Sons, Inc, N.Y., New York, (1978)

Borroughs, Eugene, "Guaranteed Investment Contracts Offer Stability in an Unstable Environment", Pension World, March (1988)

Brambley, Trisha, "More choices alone won't make all merrier", Pensions and Investments, May 14, (1990)

Brislin, Joseph A., "Converting a Defined Benefit to a Defined Contribution Pension Plan: A Multiemployer Case Study", Employee Benefits Journal, Vol. 12, No. 3, September (1987)

Bruggeman, William B., Fisher, Jeffrey D. and Stone, Leo D., "Real Estate Finance", Richard Irwin, Inc., (1989)

Buerkle, Tom, "Playing the securities niche", Institutional Investors, August (1988)

Burroughs, Eugene B., "How to Manage a Self-Directed Retirement Account" Pension World, July (1987)

Business Week, "The New Breed of Pensions that may leave Retirees Poorer", November 6, (1989)

Cambell, Wallace H., Jr., the good news about tax reform", Pension World, March (1987)

Chernoff, Joel, "Crushed by the Weight", Pensions and Investment Age, Sept 4, (1989)

Clark, Stephen, "The unintended cost of fairness", Institutional Investor, October (1989)

Cohen, Martin, "Real Estate Securities" Pension World, February (1987)

Cohen, Jerome; Zeikel, Arthur and Zinbarg, Edward D., "Investment Analysis and Portfolio Management", Richard D. Irwin, Inc., 4th edition, (1982)

Cole, Gerry, "Defined Contribution or Defined Benefit?", Perspectives, Milliman & Robertson, Inc., September (1989)

Davidson, Terrence S., "Defined Benefit and Defined Contribution Plans", Employee Benefits Basics, International Foundation of Employee Benefit Plans, Second Quarter, (1989)

DellaGrotta, S. Q., "Quantifying Risk in Real Estate Development", Employee Benefits Journal, Vol. 14, No. 4, December (1989)

Edwards, Ralph G., Jr., "Pension Funds and Real Estate: Assessing Opportunities and Risks, Journal of Real Estate Finance, Fall (1987)

Elebash, Clarence and Christiansen, William A., "State Pension Funds: "What is their Future in Real Estate", Journal of Real Estate Research, Vol. 4, No. 2, Summer (1989)

Ellis, Mark, "Managers and Dodging Bullets", Pension World, Vol. 26, No. 2, February (1990)

Employee Benefit Research Institute, "Pension Coverage and Benefit Entitlement: New Findings From 1988, EBRI Issue Brief, no.94, September (1989)

Employee Benefit Research Institute, "Individual Savings for Retirement-The 401(k) and IRA Experiences" EBRI Issue Brief, no.95, October (1989)

Employee Benefit Research Institute, "Pension Funds and Financial Markets", EBRI Issue Brief, no.91, June (1989)

Employee Benefit Research Institute, "Current Pension Investments Issues", EBRI Issue Brief, no.101, April (1990)

Enreight, Stepanie, "Six tips for adminstring a 401(k) plan", Pension World, August (1987)

Equitable Real Estate Management, Inc., "Special Report:Capital Flows", National Real Estate Investor, September 1989

Feinberg, Phyllis, "Defined contribution plans ginve boost to GICs", Pension World, July (1988)

Gladstone, David M. and Beckman, Bruce R., "Defining Compensation For Defined Contribution Plans", Journal of Compensation and Benefits, Vol. 5, No. 6, May/June (1990)

Gray, Hillary, "New Directions in the Investment and Control of Pension Funds", Investor Responsibility Research Center, Washington, D.C., (1983)

Gustman, Alan L. and Steinmeir, Thomas L., "The Stampede Toward Defined Contribution Pension Plans: Fact of Fiction?", Working Paper No. 3086, NBER Working Papaer Series, Cambridge, MA., August (1989)

Hemmerick, Steve, "Corporate Funds Demote Real Estate", Pension and Investmet Age, January 2,(1990)

Keating, Thomas A., Trends in Portfolio Diversification of Assets", Pension World, July (1983)

Kendall, Peter, "401(k) plans join ranks of most populae investment vehicles", Business Journal Magazine, April 30,(1990)

Kittrel, Allison, "401(k)s gain ground", Pension and InvestmentAge, September,19,(1988)

Liberto, Robert A., "Technological Advances Enhance Defined Contribution Apeel", Pension World, February (1990)

Light, Larry, "The Power of the Pension Funds", Business Week, November 6,(1989)

Linden, Favian, "The Six Stages of Economic Man", The Conference Board, November (1977)

Loomis, Carol J., "The Hidden Risks in Your 401(k)", Fortune, Vol. 12, No. 4, February 12, (1990)

Martin, James, "Balanced Funds", Pension World, October 1986, Pension World, October (1986)

Mattera, James T., "401(k)s Live!", Pension World, August (1986)

McAleer, Ysabel Burns and Durkin, Thomas A., "1986 Finance YearBook", American Financial Services Association, Washington, DC, (1987)

Merckle, Ned, "The Do's and Dont's of Pension Management", AMACON, New York, (1981)

Metropolitan Life Insurance Co., Statistical Bulletin, January/March (1984)

Metropolitan Life Insurance Co., Statistical Bulletin, July/September (1988)

Milner, Susan, "Self-Directed Plans Come of Age", Pension World, September (1988)

Myllnechuck, Larry H., "401(k) investors dive into GIC pooled funds", Pension World, May (1987)

Mylnechuck, Larry H., Pension World, July (1988)

Mylnechuck, Larry H., "GICs offer Alternative Risk/Return Trade-offs", Pension World, February (1990)

Opsata, Margaret, "Here Come the Funds", Financial Planning, March (1990)

Pension and Investment Age, "401(k) plans blur the lines"

Pension Benefit Guaranty Corporation (PBGC), "Annual Report", 1989

Pension Reform Act of 1974, Commerce Clearing House, Inc., Washinton (1974)

Price, G. Sinclair, "The IDA option: A Trend Toward Self-Determination", Pension World, May (1990)

Reinbach, Andrew, "Real estate firms eye 401(k) plans", Pensions and Investment Age, January 25, (1989)

Ring, Trudy, "401(k) assets up 20% in '88", Pension and Investment Age, August 21, (1989)

Ring, Trudy, "Assests increase, but lag markets", Pension and Investment, May 21, (1990)

Sagalyn, Lynne B., "Real Estate Securities: Risk and Return Over the Business Cylcle", Working Paper FP #2, Massachusetts Institute of Technology, (1989)

Salisbury, Charles H., "Plan sponsors switch to integrated 401(k) plans", Pension World, January (1988)

Tanker, Scott A., "Self-Reliance and 401(k) Plan Sponsors", Pension World, August (1988)

The Institute of Chartered Financial Analysts, "Asset Allocation for the Individual Investor", Atlanta, Georgia, June 4, (1986), Working Papers:

Bauston, Darwin M., "The Individual Investor"

Droms, William G., "Investment Risk and the Individual Investor"

Head, Wallace, "The Dynamics of the Investment Decision-Making process for the Individual Investor"

Quattlebaum, Gwen M., "Investment Risk and the Individual Investor"

U.S. Department of Labor, "Employee Benefits in Medium and Large Firms, Bulletin 2281, (1986)

Weagley, Robert O. and Gannon, Coleen F., "Investor Portfolio Allocation: The Demand For Risk", Working Paper, American Council on Consumer Interest, 35th Annual Conference, (1989)

Williams, Fred, "Managers set sights on new niches", Pension and Investment, July 10, (1989)

Zerbst, Robert h., and Cambon, Barbara R., "Real Estate: Historical Returns and Risks", The Journal of Portfolio Management, Spring (1984)

Personal Interviews:

Jeffery Pastor, Fidelity Investments
Joshua Massey, Metropolitan Life Insurance Company.
Clarence Elebash, Professor, N. Florida State, Finance Dept.
John Kenbal, Sentinel Real Estate
Joyce Frater, Equitable Life
Jerry Paolini, Xerox Corporation
James Gray, PRA Associates
Micheal Giliberto, Solomon Brothers
Jeff Molatar, Vanguard Group
Tom McDevitt, The New England
Thor Burg, The New England
Bill Salisbury, Copley Advisors
John Philips, Copley Advisors
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