

What if?

Target-Date Retirement Funds A Lifelong Investment Solution for Defined Contribution Plans

September 2006

“Investing is easy...Just buy some good stock and hold it 'til it goes up, then sell it.”

“What do you do if it don't go up?”

“Then I don't buy it.”

Will Rogers

In short

If investing were this simple, participants in defined contribution (DC) plans wouldn't express such bewilderment in deciding how to allocate their retirement savings across the maze of investment options typically offered. Even though DC plan sponsors have expanded their investment communication programs and made available financial planning tools, there remains broad concern that participants are not making the required decisions to secure an adequate retirement income without confronting the necessity to continue working well into their retirement years.ⁱ

In the past couple of years, target-date (or “life cycle”) asset allocation funds have gained acceptance as a promising lifelong investment solution for a large percentage of DC plan participants because they offer investors a simple, streamlined way of implementing an efficient investment program without the need to make ongoing financial

decisions once a retirement date is selected. This value proposition has been received very positively by employeesⁱⁱ; and participant-allocated assets grew nearly 20 percent in 2005, to more than \$130 billion.ⁱⁱⁱ Watson Wyatt has long advocated that target-date asset allocation funds should be the first tier of a limited number of cost-effective options in a DC plan investment option structure. Exhibit 1 (on page 2) addresses Watson Wyatt's preferred investment structure design for DC plans.

The growing popularity and the importance of target-date funds hold significant consequences for investor retirement wealth accumulation, because the products offered in the market differ widely in important design features. This second in a series of research articles^{iv} on DC plan issues examines these key design elements that plan sponsors should consider in selecting or creating a target-date investment option.

Target-Date Fund Design Overview

Maximizing the accumulation of retirement wealth and mitigating investment risk in a simple-to-understand, but not simplistic, investment structure are the defining objectives of target-date funds. From an investment perspective, we believe that the process of selecting a target-

date fund product should incorporate the following design elements:

- Financial efficiency of the growth and safe asset investment portfolios
- Methodology for determining the appropriate strategic asset allocation mix
- Rules for varying fund asset allocation as the investor ages (referred to as the “glide path” or “asset allocation roll-down”)
- Working beliefs underpinning construction of the retirement income portfolio asset allocation

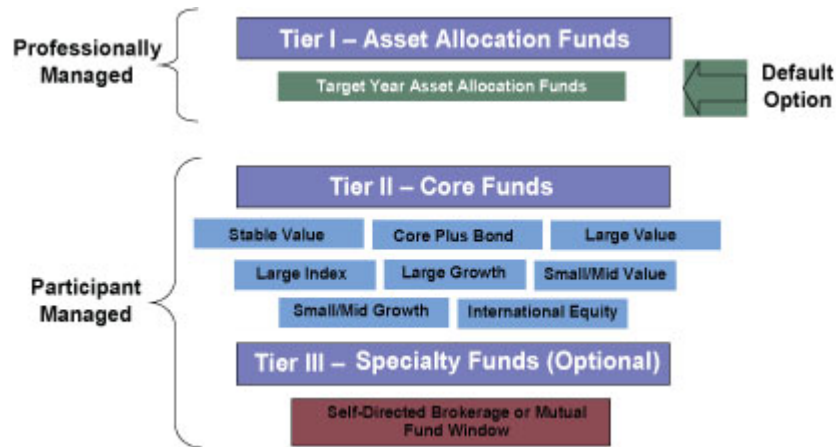
We will address each of these areas in greater detail while acknowledging that achieving a financially secure retirement depends heavily on three other factors: adequacy of retirement saving, level of retirement spending, and management of the unpredictability of life expectancy (longevity risk). Even a financially efficient investment program cannot compensate for inadequate saving behavior. Furthermore, the program may run out of assets if the participant has chosen an installment distribution retirement option instead of an annuity and/or outlives even a prudently constructed retirement income portfolio.

What if? pieces review current market trends and summarize research. As such they complement more detailed Watson Wyatt research such as in our Technical Reports series. Any opinions in this document are those of the authors and not necessarily Watson Wyatt. No part of this document should be construed as providing specific consulting advice.



Exhibit 1

DC Plan Investment Structure Building Blocks



Target-Date Asset Allocation Funds are a series of different retirement-year defined investment funds that contain two investment components — a portfolio of *growth assets* and a portfolio of *safe assets* (or liability matching assets). These are typically made up of Tier II core funds, representing a limited number of cost-effective investment building blocks, and a formula for systematically shifting an investor’s assets from the growth portfolio to the safe portfolio as a function of the number of years remaining until the “target-date” retirement date. Investors only need to select the fund whose target date corresponds to their planned retirement date. Once the investor has selected a targeted retirement date, the fund’s automatic, time-varying investment rules take over. Upon reaching the target date, the fund is typically locked into a permanent or sometimes two-stage growth/safe portfolio allocation for the remainder of the investor’s life.

Lifestyle Funds are another form of asset allocation funds whose allocations to growth and safe assets are fixed based on different risk levels instead of investment horizon to target retirement date. Lifestyle funds do not employ time-varying investment rules, so they require investors to periodically re-evaluate their complete financial circumstances and risk aversion and select the fund that best matches those characteristics.

While life cycle funds may enable engaged and financially astute investors to better fit retirement investments into their total wealth framework, target-date funds with their automatic investment features are better suited for the majority of retirement savers, who should delegate asset allocation decisions to professionals.

What if? pieces review current market trends and summarize research. As such they complement more detailed Watson Wyatt research such as in our Technical Reports series. Any opinions in this document are those of the authors and not necessarily Watson Wyatt. No part of this document should be construed as providing specific consulting advice.

Retirement Security – Choices and Consequences

To illustrate the importance of saving adequacy and investment efficiency conceptually, the exhibit below presents the asset side of a personal balance sheet snapshot for an employee at age 30 and then at age 65 assuming (1) she saves at an adequate rate and invests efficiently, or (2) she saves at a lower rate than required to support a retirement income replacement ratio of, say, 80 percent of her salary immediately before retirement, and invests too conservatively over her working career.

The liability side in all cases is the present value of the targeted income to be consumed in retirement, including assets that can be converted into income, plus other debt (e.g., home mortgage).

At age 30, the majority of her assets comprise the present value of her future earnings and the net value of personal assets, such as a home. She has only a small amount of accumulated financial assets but has 35 years to grow those financial assets through contributions and investment returns.

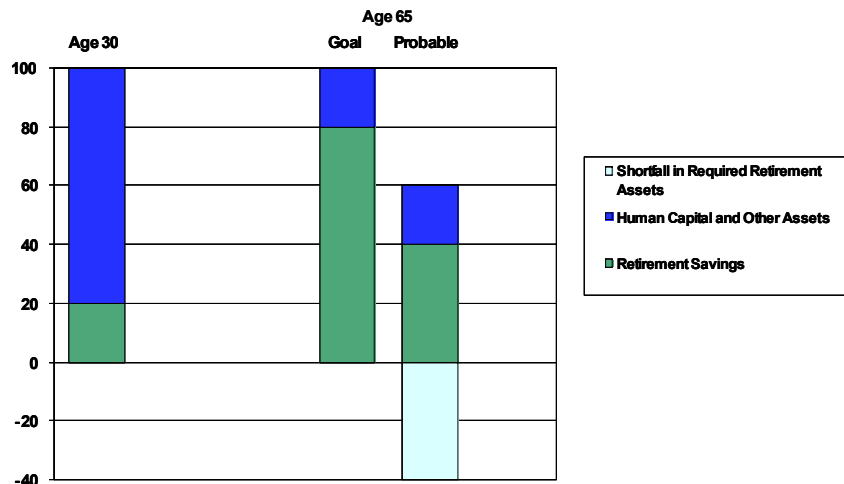
The goal at retirement is depicted in the middle bar. Retirement assets meet or exceed the value of retirement liabilities, and any excess combined with other assets represents the employee’s net worth. The value of human capital is totally discretionary if she has a positive net worth.

The “probable” scenario on the right is the outcome too many DC retirement plan employees are destined to experience at retirement if they don’t increase their rate of saving and don’t invest those assets more appropriately. Retirement assets fall significantly below the income needed to support the investor’s lifestyle expectations.

The consequences are some combination of (1) a significantly longer working career beyond age 65, and (2) a downward adjustment in the lifestyle that can be supported. Target-date funds can address the investment efficiency problem but cannot make up for saving inadequacy. At some point prior to their retirement date target, typically 10 years, employees confront the reality of their retirement income predicament. They may significantly increase their saving rate, a good action, and also raise the risk profile of their investments significantly in a “roll the dice” panic action that could worsen their financial position if there is not a sufficient period of time to recover from a serious stock market decline. Maybe individuals really expect to continue working into retirement because they have made a conscious decision to consume today rather than defer consumption (i.e., save) to support a higher retirement lifestyle. Unfortunately, surveys do not indicate that employees recognize they are effectively locking themselves into longer required working careers.

Exhibit 2

Employee Personal Assets



What if? pieces review current market trends and summarize research. As such they complement more detailed Watson Wyatt research such as in our Technical Reports series. Any opinions in this document are those of the authors and not necessarily Watson Wyatt. No part of this document should be construed as providing specific consulting advice.



Financial Efficiency of the Investment Portfolios

Vendors of target-date funds have taken a pretty standard approach to designing the asset class composition of their funds. The growth asset segment typically comprises domestic and foreign equities and possibly a small allocation to real estate investment trust (REIT) securities. The safe portfolio assets typically include shorter duration bonds, inflation-protected bonds Treasury Inflation-Protected Securities (TIPS), cash and, in some cases, stable value contracts.

The design elements we think are important include:

- The core investment options should comprise the major global asset class categories and capture their broadest attributes without biases (i.e., style, capitalization, market timing, tilts).
- The target-date funds should, where possible, use a blend of the plan's core investment options. Fund of mutual funds structures are generally less efficient than where "non-branded" core options are used, particularly when they can be constructed by leveraging off manager relationships in a defined benefit (DB) plan, if one exists.
- Open fund architecture is optimal so that the core and target-date funds can achieve best-in-class investments and fee levels.
- Since asset allocation decisions have important consequences for retirement wealth accumulation, we believe that the investment structure efficiency of target-date funds can continue to improve. We refer to this as improving portfolio diversity, which involves both expanding the investment opportunity set to include assets and active strategies

with different risk-return drivers, and combining them in ways that improve fund return/risk characteristics. Achieving higher investment efficiency would require a reduction in the substantial current reliance on equity risk premium and a corresponding introduction of exposure to different and uncorrelated sources of return. Potential additions might include liquid alternative investments such as absolute return strategies and commodities, and even eventually illiquid investments such as direct real estate investments and private equity.

In some cases, vendors have used target-date funds as a source of positive cash flow for a large number of their proprietary mutual funds. The result is usually an over diversified mix of both reasonable and mediocre funds that is the antithesis of financial efficiency. Such practice is not generally in the best interests of clients and should be actively discouraged.

In addition to financial inefficiency, target-date funds comprising a vendor's active proprietary funds do not offer much in the way of fee transparency, since revenues from managing the assets and from constructing and rebalancing the models are all bound together. The fees for some of these funds have come down some but are still relatively high, and economies of scale are not provided as assets grow.

Determining Asset Allocation

It is a long-held financial axiom that rational investors should allocate their investment portfolios between high-risk growth assets such as equities and low-risk assets such as bonds and cash to maximize expected wealth while not exceeding some threshold level of potential loss in portfolio value.

This downside risk limit is capable of being quantified as to magnitude, probability of occurrence and recovery period for any investment asset mix. Furthermore, determining an appropriate capital-at-risk threshold should consider the size of the investor's retirement assets relative to future saving cash flows, and investment time horizon to retirement.

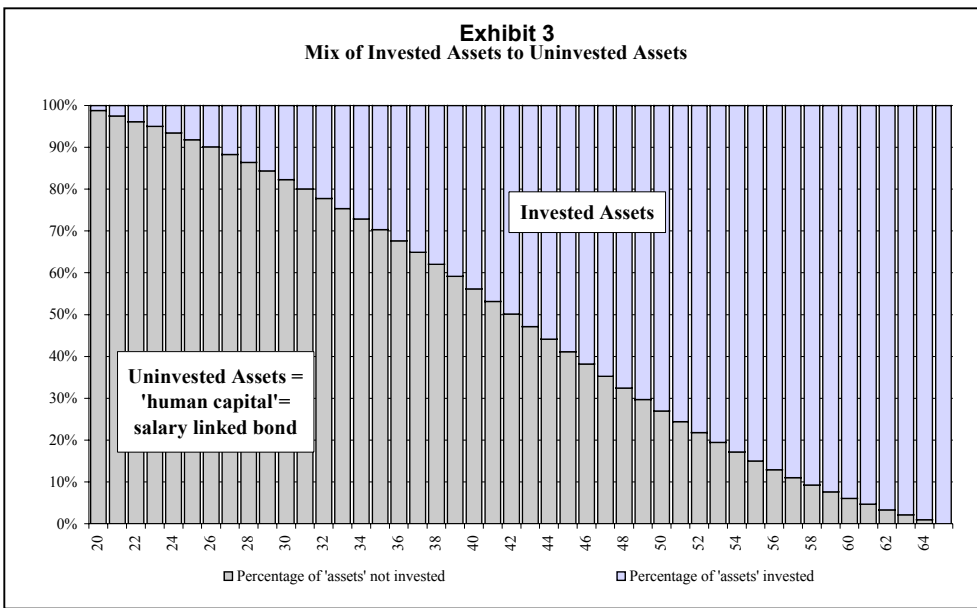
The approach we have taken (see Exhibit 3 on page 5) is to compare an individual's human capital (the value of future salary) and investment capital (retirement saving cash flows deferred from salary plus investment return) as one ages. When a person is younger, the majority of wealth is in the form of human capital — one's future expected earnings — which has financial characteristics very much like a bond.

Industry standards are to allocate 80-90 percent of a participant's assets to growth investments until approximately 10 years away from the targeted retirement date, when the allocation to growth investments should begin to decline and stable investment allocations increase correspondingly. Not surprisingly, it is at this point that target-date fund asset allocations begin to deviate in how the conflicting objectives of wealth maximization (requiring higher growth asset exposure) and drawdown minimization (requiring higher safe asset exposure) are prioritized. Allocation differences are especially evident in the retirement portfolio compositions where the allocation to growth investments ranges from 20 to 65 percent.

What if? pieces review current market trends and summarize research. As such they complement more detailed Watson Wyatt research such as in our Technical Reports series. Any opinions in this document are those of the authors and not necessarily Watson Wyatt. No part of this document should be construed as providing specific consulting advice.



Exhibit 3
Mix of Invested Assets to Uninvested Assets



We believe that target-date retirement funds must design the dynamic asset allocation processes of their funds with an explicit consideration of the following factors:

- Investor attitudes toward risk and how risk aversion changes in relation to the size of financial wealth and investment horizon (i.e., will investors react differently to investment losses such that they might make a “knee jerk” reaction that would be detrimental to their long-term retirement wealth accumulation).
- Retirement saving patterns throughout the participant’s working career (i.e., does the trajectory of saving rates change), and how that pattern should be addressed from an asset allocation standpoint

Some of the important asset allocation design features we expect to see in quality target-date fund products include:

- Use of some type of efficient frontier calculation and Monte Carlo forecasting process. The steps of the process should involve:

- running a capital market modeling analysis to create an efficient frontier
- selecting portfolios from the efficient frontier
- selecting the appropriate risk level and metrics for the given target retirement date
- using the alternative portfolios in a Monte Carlo forecast
- using the Monte Carlo forecast results, risk level and metrics to decide on the allocation appropriate for the target retirement date.

In evaluating the investment process of target-date fund vendors, we find that many use efficient frontier analysis and Monte Carlo forecasting but that most struggle with how to select mixes to be studied and how to set the risk level appropriate for different target retirement dates. All vendors appear to apply human judgment during the process — mostly in setting the spending policy level and deciding acceptable shortfall risk levels. The use of human judgment is probably best for reviewing results for reasonableness and making minor

refinements. However, we believe some vendors are simply justifying their own opinions rather than allowing for a true scientific test of their ideas.

- Generally, investors in their 20s and 30s have a high appetite for risk because they have time to use their future earnings power to correct for capital market downturns that will occur periodically.
- Most target-date strategies involve 90+ percent equity allocations in the early profile years, with the equity glide path beginning 10 to 20 years prior to retirement into a lower capital risk investment profile (i.e., greater principal and income stream stability).
- Other diversifying assets such as real estate, hedge funds and commodities might be used in the future to improve the investment diversification of the growth portfolio, if it were treated like the growth segment of a DB plan’s asset allocation.
- The glide-path trajectory process should reflect a clear philosophy supporting how the investor’s asset allocation should systematically change over a defined period of years before retirement.
- The retirement portfolio should be a low-risk, cash-outflow-matching mix of longer-dated government and high-quality corporate bonds, an inflation-protected component and cash. Stable value investments might have a role in the structure because of their principal-protected characteristics.
- In terms of postretirement investment options, an individual should still be 40 percent invested in equities at age 60, and perhaps 20 percent at age 80 in order to mitigate longevity risk.

The most frequently selected initial retirement distribution mode is a fixed annual percentage of the investor’s account value at retirement.

What if? pieces review current market trends and summarize research. As such they complement more detailed Watson Wyatt research such as in our Technical Reports series. Any opinions in this document are those of the authors and not necessarily Watson Wyatt. No part of this document should be construed as providing specific consulting advice.



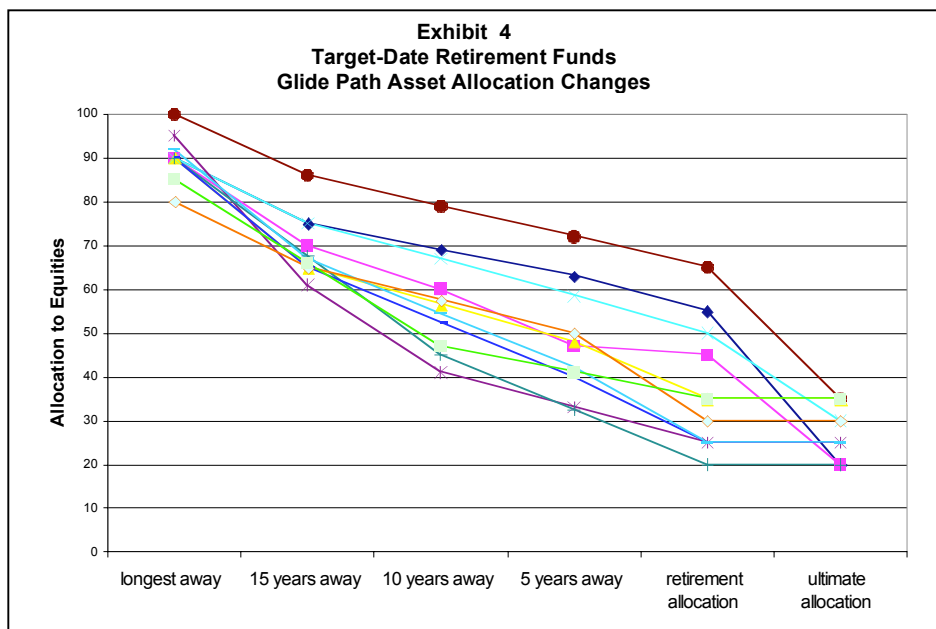
Distributions initially starting at 5 percent or less of the beginning balance and increasing with inflation are perhaps ideal. Unfortunately, the average distribution rate is higher. Therefore, some funds attempt to compensate for this overspending with more aggressive asset allocations and with a corresponding increase in risk.

As annuities, which address longevity risk, are added to the array of retirement distribution options available to DC plan participants, vendors of target-date funds will need to consider changes to their current glide-path asset allocations for investors planning to select an annuity distribution option. The target-date portfolio should become more heavily invested in long-dated bonds to hedge the annuity purchase rate, which is affected by the yields on longer maturity bonds.

It should be noted that important information might not be factored into the asset allocation. For example, some individuals have large investments outside of their pension plans. These individuals should consider tax issues when making an asset allocation decision inside the pension plan. This is not usually factored into the target-date retirement fund asset allocation, as individuals in this type of situation should be getting customized advice and should generally not be selecting the target-date retirement fund.

Varying the Asset Allocation

The glide paths employed by target-date retirement fund providers vary considerably, as shown in Exhibit 4. The transition from the more aggressive portfolios at earlier ages to more conservative ones near the target retirement date should begin 10 or more years before the target retirement date, with the majority of the asset allocation change occurring in the last 10 years. If annuities are not to be



provided at the target date, the glide path should continue into retirement.

Asset allocations varying from the consensus view need to be justified by the provider and understood by the plan sponsor to see if they are in agreement with the views of the plan sponsor. More aggressive asset allocations are often justified by concerns about participants outspending or outliving their savings. A plan sponsor needs to decide if it is appropriate to attempt to compensate for the participant's saving shortcomings or spending excess by making shifts to the asset allocation.

To avoid selling large parts of the portfolio during depressed markets, the glide path should "reallocate," or change the asset allocation, along the path on an annual basis rather than just once every five years or so.

An active strategy for reallocation adjustments and timing should be avoided unless the manager can demonstrate persistent skill in this area.

Retirement Income Portfolio Construction

Annuities, which provide a guaranteed lifetime income and will become a more prominent component of retirement distribution choices to address the dual challenges of increasing life expectancies and paucity of DC plan distribution options, will be discussed in a forthcoming paper.

Running out of money is the primary fear Americans have about retirement, and more than four out of five workers indicate they prefer to draw a stable income payment for life.^v Therefore, the philosophical beliefs that target-date fund vendors follow in building their retirement income fund asset allocation is extremely important. These beliefs vary significantly as indicated by the wide range of allocations to equities — from a low of 20 percent to a high of 65 percent. Following are the key objectives:

- The first objective of the retirement portfolio should be to last throughout the retiree's life, since

What if? pieces review current market trends and summarize research. As such they complement more detailed Watson Wyatt research such as in our Technical Reports series. Any opinions in this document are those of the authors and not necessarily Watson Wyatt. No part of this document should be construed as providing specific consulting advice.



there is a 50 percent probability that at least one member of a couple at age 65 will reach age 92. Therefore, the optimization problem is to construct an asset allocation that maximizes the probability that the fund will not become exhausted over a 25-to-30-year distribution horizon, assuming 3-5 percent is drawn from the portfolio annually. A secondary objective is to protect the retiree's purchasing power. Not surprisingly, high equity allocations are required to achieve the highest probability of success on this priority.

- The second objective of the retirement portfolio should be to minimize a specified "bad case" percentage decline in its value — for example, a 1 in 20 chance that the portfolio's value declines 15 percent or more in any year. There is no industry standard agreement on how downside risk control should be defined and prioritized, which underscores the wide range of equity allocations in retirement income portfolios. Vendors heavily weighting longevity risk protection and purchasing-power preservation goals that require high equity allocations are assuming that the retiree has the discipline to stay the course when the inevitable capital market "air pockets" occur. Conversely, those vendors allocating 20-30 percent to equities are taking the position that retirees place a greater priority on avoiding financial surprises when they may have very limited alternatives for replacing income. Our position is that capital preservation should be a high priority notwithstanding the fact that people are living longer.

Summary

Target-date asset allocation funds represent a simple but financially efficient solution that the majority of DC plan participants should select to achieve their retirement income goals — but only if retirement saving during one's working career is adequate.

However, even if an employee makes all the right decisions — early plan participation, strong saving behavior throughout employment, annual saving rate increases and use of professionally managed target-date options — decisions made during the wealth distribution phase, retirement, can unravel the adequacy of that retirement financial nest egg. In our next paper, we will address the retirement distribution phase and how plan retirement distribution options need to evolve in order for participants to be able to manage the financial risks most relevant to them.

Watson Wyatt Investment Consulting Thinking Ahead

This article is written by members of our Thinking Ahead Group (TAG), who sit within the Investment Practice at Watson Wyatt. Their role is to identify and develop new investment thinking and opportunities not naturally covered under mainstream research. They seek to encourage new ways of seeing the investment environment in ways that add value to our clients.

The information contained in this article does not constitute legal, accounting, tax, consulting or other professional advice. Before making any decision or taking any action relating to the issues addressed in this article, please consult a qualified professional adviser.

Watson Wyatt Investment Consulting, a division of Watson Wyatt, is focused on creating financial value for institutional investors through independent, best-in-class investment advice. We are specialist investment professionals who provide coordinated investment strategy advice based on expertise in risk assessment, strategic asset allocation and investment manager selection.

Watson Wyatt Investment Consulting provides investment advice to some of the world's largest pension funds and institutional investors, and has more than 300 associates in Europe, the Americas and Asia.

In the United States, investment advisory and investment consulting services are provided by Watson Wyatt Investment Consulting, Inc., which is a subsidiary of Watson Wyatt & Company. Watson Wyatt Investment Consulting, Inc., is a registered investment adviser with the Securities and Exchange Commission.

Watson Wyatt (NYSE: WW) is a leading global human capital and financial management consulting firm. The firm specializes in employee benefits, investment consulting, human capital strategies, technology solutions, and insurance and financial services and has 6,000 associates in 30 countries. The firm is located on the Web at www.watsonwyatt.com.

ⁱ See, for example, *Will More of Us Be Working Forever? The 2000 Retirement Confidence Survey*, EBRI Issue Brief No. 292, April 2006.

ⁱⁱ EBRI Issue Brief No. 292 reports that 7 in 10 employed workers favor an auto-enrollment plan feature and that 7 in 10 favor automatic investments of contributions and would be *very* or *somewhat* interested in having their retirement assets invested in a life cycle fund.

ⁱⁱⁱ Pensions & Investments, May 2006.

^{iv} See *Achieving the goals of DC participants*, Watson Wyatt, May 2006

^v National Association of Variable Annuities (NAVA), "2005 Retirement Fears," March 28, 2005. Survey conducted by Kelton Research.