Washington State
Investment Board

Defined Contribution and Savings Plans – Risks and Risk Management Strategies

November 13, 2015

Phil Paroian

Senior Investment Officer, Public Equity

Overview

- Background and Context
- Risks in a Defined Contribution or Savings Program
- Risk Mitigation Strategies
- Next Steps

Background and Context



Pension and Investments Headline

June 15, 2015 Pionline.com $16 an issue / $325 a year

crain

Pensions&Investments

THE INTERNATIONAL NEWSPAPER OF MONEY MANAGEMENT

AT DEADLINE

H-P offers lump sum

Hewlett-Packard settled about $810 million in U.S. defined benefit plan liabilities in May, following a voluntary lump-sum offer made to vested former employees who have yet to retire.

The company announced the lump-sum offer June 8 in a 10-Q filing with the Securities and Exchange Commission. About 50% of the participants to whom the offer was made in January accepted. The number of participants was not available by press time.

HP froze its U.S. defined benefit plan in 2008.

As of Oct. 31, U.S. defined benefit plan assets totaled $11.979 billion, and projected benefit obligations totaled $13.756 billion, for a funding ratio of 87.1%, according to the company's most recent 10-K filing.

Gretchen Tai, HP vice president, global treasury, and CIO; and Sarah Pompei, HP spokeswoman, couldn't be reached for comment by press time.

Northern Bank buy-in

Northern Bank Pension Scheme, completed a £680 mil-

CONTINUED ON PAGE 34

Bartomeu Amengual

NO HOLDING BACK: Roger Urwin said the 'factor revolution' cannot be stopped.

SPECIAL REPORT REVOLUTIONARY/EVOLUTIONARY IDEAS IN RETIREMENT

DC plans lag DB brethren in the management of risk

By CHRISTINE WILLIAMSON

The most revolutionary ideas in institutional investing come from new definitions of risk and how to manage it.

But the institutional universe remains dichotomous: Defined benefit plan sponsors, especially cash-strapped public pension plans, have become converts to risk factor-based investment and internal management at a much faster pace than those of defined contribution plans.

In fact, investment evolution within the defined contribution plan mar-

SEE RISK ON PAGE 23

MORE FROM THE REPORT

- Defined benefit approaches move into DC plans. Page 16

Washington

IRS to halt issuing certain determination letters

By HAZEL BRADFORD

The IRS' plan to stop issuing some determination letters, necessary proof for companies that their retirement plans are tax qualified, puts plan executives into the hot seat.

No formal announcement has been made, but in speeches made to several groups of tax and benefit experts this year, IRS officials said they are planning to stop the current system at the end of next year.

Under the plan, the cash-strapped agency — at its lowest level of funding since 2008 — would only provide such letters when plans are started or terminated.

Retirement plan executives no longer would be able to receive private-letter rulings showing that changes made to their plans don't affect their tax-qualified status. Only during an IRS audit would plan sponsors find out whether their plans are still compliant.

That has plan sponsors feeling vulnerable to IRS audits, in cases where a determination letter no longer applies to a modified plan, or its current five-year review period expires. The five-year cycle for issuing letters requested by ongoing plans began in 2007 as an earlier attempt to deal with backlogs. But IRS officials recently decided they still couldn't keep up with the demand.

Ending the program is "a really big change," said Victoria Judson, IRS associate chief counsel for tax-exempt and government enti-

SEE IRS ON PAGE 35

Background

Retirement savings are for everyone, whether in a defined benefit, defined contribution, or hybrid plan.

- Defined benefit members in Plans 1 and 2 should be using the Deferred Compensation Plan (DCP) for additional retirement savings.
- Improvements to the Washington State defined contribution/457 savings programs are consistent with fiduciary duty and have the potential to bring important improvements that benefit all members of Plans 1, 2, and 3.

What this presentation is intended to be:

- A discussion of the risks in savings programs and how the programs can be improved to mitigate some of those risks.

What this presentation is not intended to be:

- A discussion of the pros and cons of defined benefit versus defined contribution programs.

Background

Division of responsibilities:

- Department of Retirement Systems (DRS) is responsible for plan design.
- Washington State Investment Board (WSIB) is responsible for designing and managing the menu of investment options.
- Both organizations have tools that could mitigate risks, but this presentation focuses on the risk management strategies that are within the purview of the WSIB.

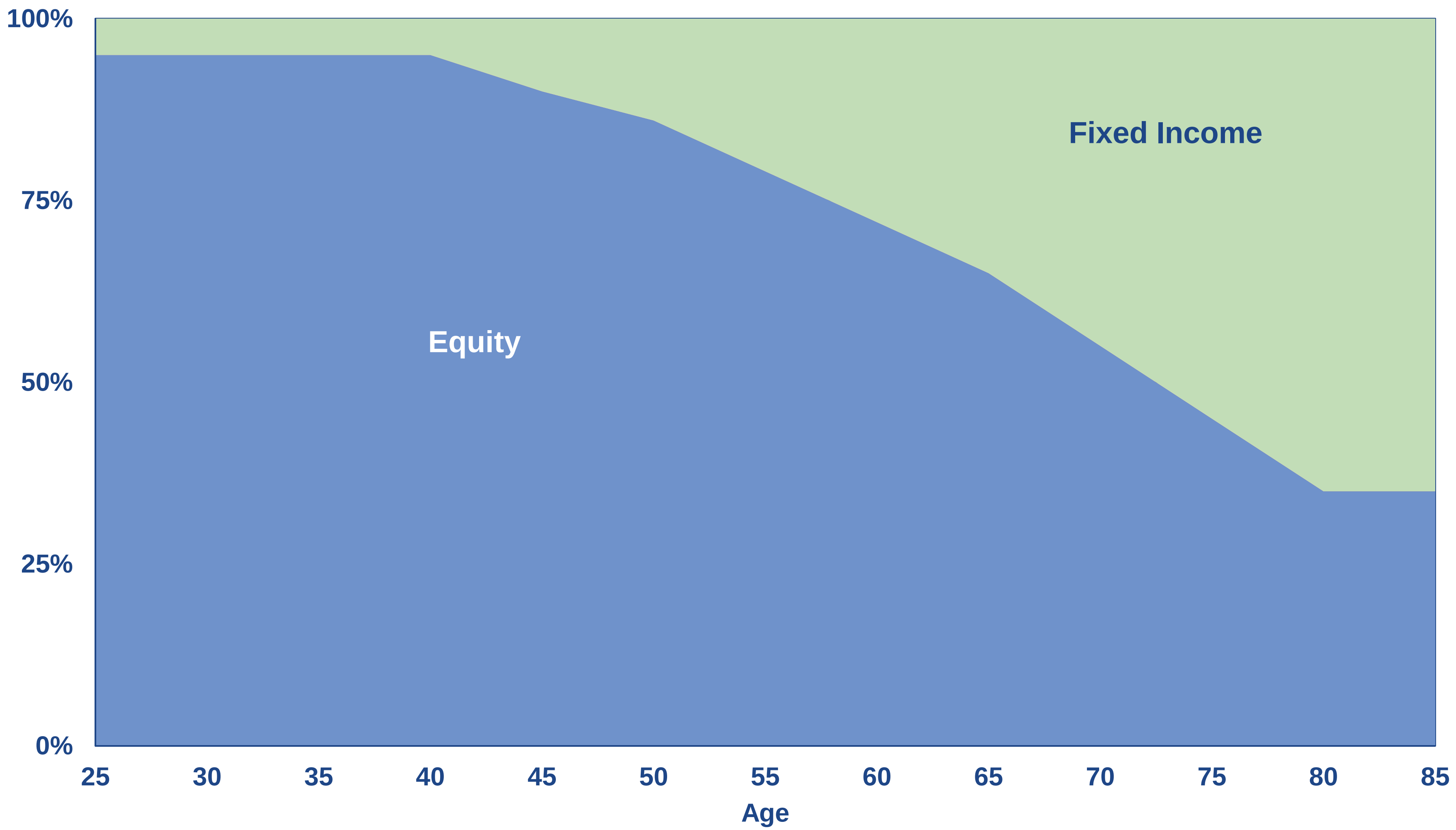
Target Date Strategies

- Use up to nine subcomponents to create a balanced fund:

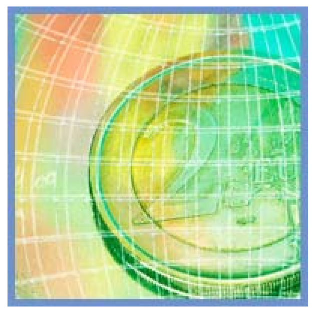
Target Date Manager	Manager	Active or Passive
U.S. Large Cap Equity	BlackRock	Passive
U.S. Small Cap Value Equity	AB Global	Active
U.S. Small Cap Growth Equity	AB Global	Active
Global ex-U.S. Equity	BlackRock	Passive
Global REITs	AB Global	Active
Fixed Income	WSIB	Active
U.S. TIPs	WSIB	Active
U.S. High Yield	AB Global	Active
U.S. Short Duration Bonds	AB Global	Active

- Adjust asset mixes automatically as members move through their working lives and through retirement; this is called the "glide path."
- Glide path and some subcomponents are managed by AB Global (formerly AllianceBernstein).
- BlackRock is used to manage the passive equity components, and WSIB's fixed income team manages most of the fixed income exposure.
- Target date strategies are the default option for Washington State defined contribution and savings plans.

Glide Path Construction



Risks



Core Challenge of Defined Contribution Programs

Lack of pooling

Lack of pooling of assets:

- Each member has to make his or her own investment decisions.
- Scale and timeframe are very different.
- Ability to invest in private assets becomes much more problematic.
- Behavioral effects have a significant impact.

Lack of pooling of liabilities:

- Each individual member takes the risk that they will live longer than their money lasts, called "longevity risk."
- Little, if any, understanding of retirement income levels.

Specific Risks in Defined Contribution or Savings Plans

Market Volatility

- Members could move their money at the wrong time resulting in much worse personal outcomes.
  - Happens less often than thought.
- Members with exactly the same history can have vastly different outcomes depending on the timing of when they start saving and when they retire.
  - An example: Two members have the same salaries, same increases, same contribution rates, same investment choice.
  - Member #1 saves for 30 years but starts September 1977 and retires September 2007 at the height of the market before the Great Financial Crisis (GFC).
  - Member #2 saves for 30 years but starts 18 months later, in March 1979, and retires in March 2009 at the bottom of the market during the GFC.
  - Under a defined benefit plan, same salary history + same years of service = same pension benefit.
  - Under the scenario above, Member #1 retires with $850,000 in his or her retirement account (at the peak of the market), while Member #2 retires with $447,009 in his or her account (at the market trough).
  - Despite exactly the same history, behavior, contributions, and investment choices, market volatility can mean vastly different retirement outcomes.
  - If we can dampen volatility, members with similar histories may have more comparable outcomes.

Specific Risks in Defined Contribution or Savings Plans

Longevity risk

- Individuals can have bad luck/bad timing.
  - As shown on the previous page, timing could mean a much lower account balance than comparable members.
- Individuals can make poor decisions, resulting in:
  - Lower account balances.
  - Spending too much too soon.
- Individuals can live longer than expected.
  - Living longer than your money lasts.
  - If everyone saves for the "worst case scenario," potential capital misallocation.

Other Risks in Defined Contribution or Savings Plans

There are other risks which we are not discussing at this time. For example, the risk of potential inflation (or deflation) and the effect on members.

Potential Risk Mitigation Strategies

Risk Mitigation Strategies

Risk mitigation strategies fall into three general approaches:

- **Tactical adjustments to mitigate short-term risk/volatility.**
- **Diversification to mitigate long-term risk/volatility.**
- **Insurance against adverse outcomes.**

We will briefly introduce the concepts of six potential risk mitigation strategies that include some of each of these three types:

- **"Best in class" management in each and every component.**
- **Multi-manager structure.**
- **Alternative equity exposure.**
- **Volatility management.**
- **Private assets.**
- **Guaranteed income or longevity insurance.**

Improving Risk/Return Profile of Target Date Components

Increasing return and/or decreasing volatility of components:

- Results in members having higher account balances.
  - Less chance of running out of money (longevity risk).
- Results in lower volatility.
  - Less impact if a member retires at a particularly good time (at a market high) or poor time (at a market low).

Risk mitigation strategy #1:

Rebids of components

- Ensure we have "best in class" management in each and every component.
- Underperforming components have been replaced by passive management and all current active components are adding value long-term, but there are some questions whether current management represents the best we could hire.

Improving Risk/Return Profile of Target Date Components

Risk mitigation strategy #2:

Move to multi-manager formats

- All equity in the target date funds and in the stand-alone equity options is passively managed (except U.S. small cap within target date funds), which means no downside protection.
- In the Commingled Trust Fund (CTF), we execute a strategy that uses mostly passive management combined with selected active managers.
- About a third of defined contribution or savings programs now offer multi-manager options in which the sponsor manages a mix of passive and/or active investment managers.
- Aim: better returns with lower volatility.

Adjusting the Composition of Target Date Components

People are living longer

- A man aged 65 has a 50/50 chance of living until age 89 and 25 percent will live past the age of 94.
- A woman aged 65 has a 50/50 chance of living until age 90 and 25 percent will live past the age of 96.
- Members still need significant equity exposure, even at their retirement age, but higher equity exposure means higher volatility.
- In addition to adjusting the **amount** of equity in the glide path as a member moves to and through retirement, should we adjust the **type** of equity?

Risk mitigation strategy #3:

As members move to and through retirement, reducing the volatility of the equity component by diversifying passive market-cap weighted strategies with some combination of:

- More active management (discussed in #2).
- Fundamental-weighted or alternative-weighted indices.
- Low volatility strategies.

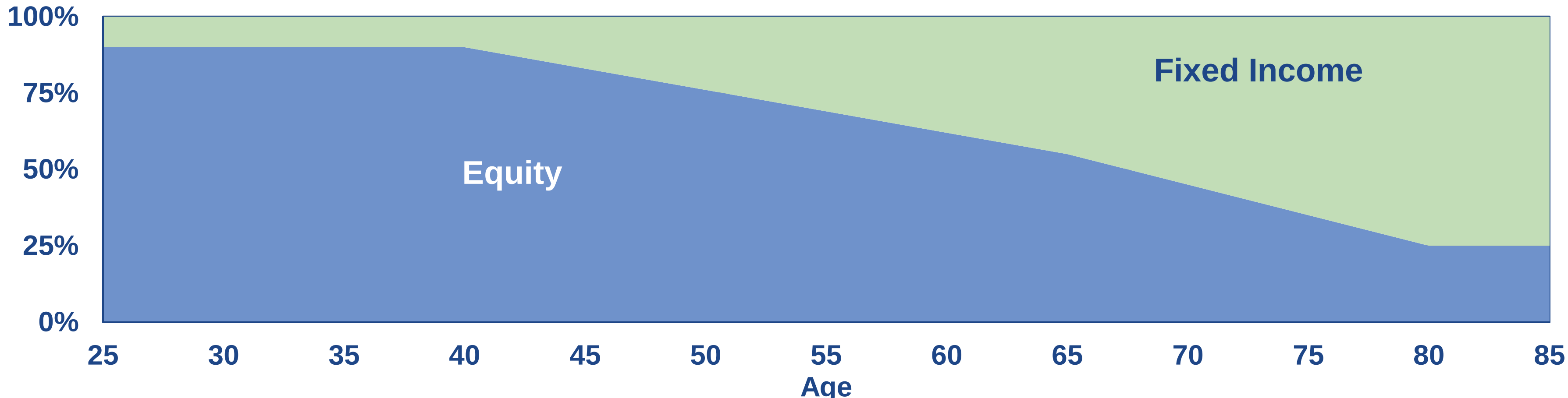
Adjusting the Asset Mix to Dampen Short Term Volatility

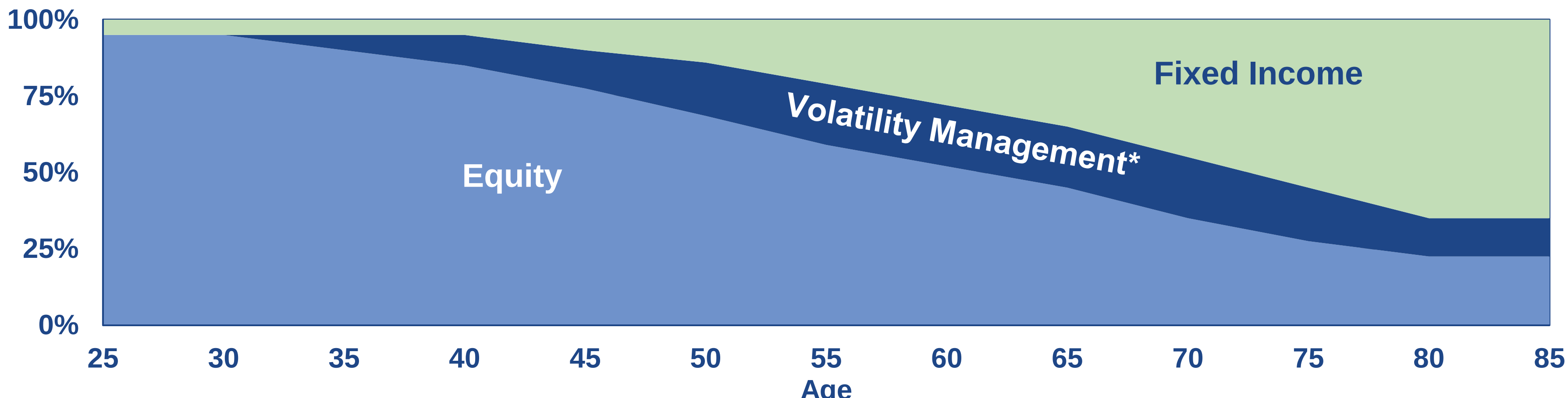
Risk mitigation strategy #4:

Include a sleeve of "volatility management" in the glide path asset mix.

- Volatility management can be used to take less risk.
  - It cannot be used to take more risk/increase the equity weight.
- Active management/short-term market timing.
- Currently implemented in some AB products.
- Mix of quantitative and qualitative inputs.
- Results to date: returns about the same or slightly lower, but volatility is reduced.
- Additional fees on the assets within the volatility management component of the asset mix.

Glide Path with Volatility Management





* In stocks when volatility is low or normal vs. return potential; in bonds when volatility is high vs. return potential

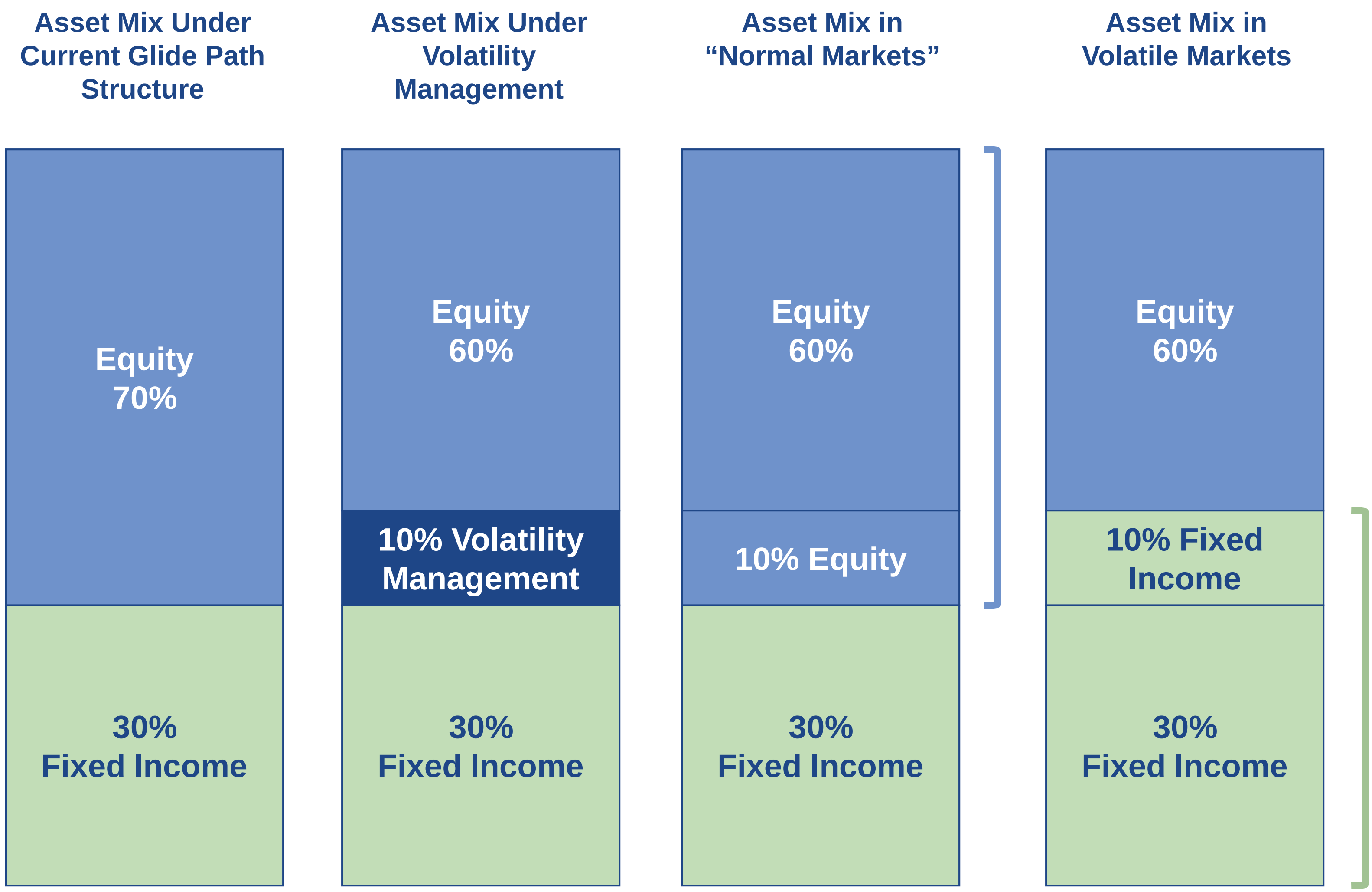
Adjusting the Asset Mix to Dampen Short Term Volatility

Risk mitigation strategy #4 (continued):

Include a sleeve of "volatility management" in the glide path asset mix.

- As an example to illustrate volatility management, consider a person with an asset mix within their target date funds of 70 percent equity and 30 percent fixed income.
- Under volatility management, that would be subdivided into 60 percent equity, 10 percent volatility management, 30 percent fixed income.
- In "normal" market environments, the volatility management part would be invested in equity and would be exactly the same as it is now, 70 percent equity and 10 percent fixed income.
- In "volatile" market environments, the sleeve designated as "volatility management" would be shifted into fixed income, so the asset mix would become 60 percent equity, 40 percent fixed income.

Examples


Asset Mix Under Current Glide Path Structure
Asset Mix Under Volatility Management
Asset Mix in “Normal Markets”
Asset Mix in Volatile Markets
Equity 70%
30% Fixed Income
Equity 60%
10% Volatility Management
30% Fixed Income
Equity 60%
10% Equity
30% Fixed Income
Equity 60%
10% Fixed Income
30% Fixed Income

Diversify the Asset Mix

Risk mitigation strategy #5:

Add private assets to the asset mix.

- Current target date asset mix is entirely publicly-traded assets.
- Current CTF asset mix is only 57 percent publicly-traded with 43 percent in illiquid assets.
- WSIB has a long history and high level of expertise with private assets and exceptional private asset programs already built.
- Potential for increased returns and/or lower volatility.
- Many challenges:
  - Defined contribution and savings plans have traditionally required daily liquidity, though
    - Not true of the Total Allocation Portfolio (TAP) option.
  - What members want depends what question you ask:
    - Would you be willing to give up daily liquidity?
      - Most say no.
    - Would you give up daily liquidity for better returns with lower volatility?
      - Most say yes.
- Valuation is problematic.
- This has not been implemented by any major public pension plans in the U.S., though it is standard in Australia, and some corporate U.S. plans are starting to implement.

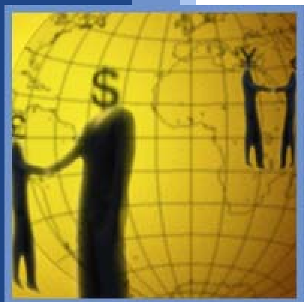
Provide a Guaranteed Income Level

Risk mitigation strategy #6:

Some form of guaranteed income/longevity insurance.

- Traditionally, there have been two approaches:
  - Annuities
    - Guaranteed lifetime income, but no upside and no ownership of remaining balance if the member passes away.
  - Systematic monthly withdrawal from accounts
    - Upside participation and ownership of remaining balance remains, but no downside protection, and no guarantee that the funds will last as long as the member lives.

Provide a Guaranteed Income Level



AB Global has launched a product that offers longevity insurance:

- Starting at age 50, some assets are diverted from the typical glide path into "Lifetime Income Strategy," and all assets are under Lifetime Income by age 63.
- Longevity insurance is purchased that guarantees a member will get at least a specific quoted amount each month in retirement.
- If his or her account balance is depleted at any point in the future, due to negative market moves or because the person lives a very long time, the insurance company will step in and continue to pay the guaranteed monthly income as long as the member is living.
- If markets decline, there is no downside. Whenever the account balance is depleted, the insurance company will continue to pay the guaranteed income.
- There is upside. If markets rise, and the account balance rises, longevity insurance will be purchased on the increased amount, and the member's guaranteed monthly income will rise.
- If the member passes away, his or her beneficiaries still get whatever account balance remains.
- Longevity insurance bids are received from multiple companies to ensure competition and achieve the best results for members.

Provide a Guaranteed Income Level

Challenges:

- Complex to understand.
- Challenging to communicate to members.
- Fees are currently about 1 percent per annum for whatever assets are covered by Lifetime Income.
- Most members would be better off to not pay the fees, however;
  - This is true of all insurance. For example, most people will not need home insurance and would be better investing the premiums, but most people still want the coverage. For those who have a catastrophic event, it's vital.
- AB Global argues that a lifetime income guarantee may make people more comfortable investing more and/or may allow them to tolerate the volatility of higher equity proportions through retirement.

Next Steps

- Board input and feedback.
- Further staff research.
- Present to the DRS Advisory Committee this fall.
- Potential for further Board educational sessions.
- Prioritization of projects as part of the annual planning process.

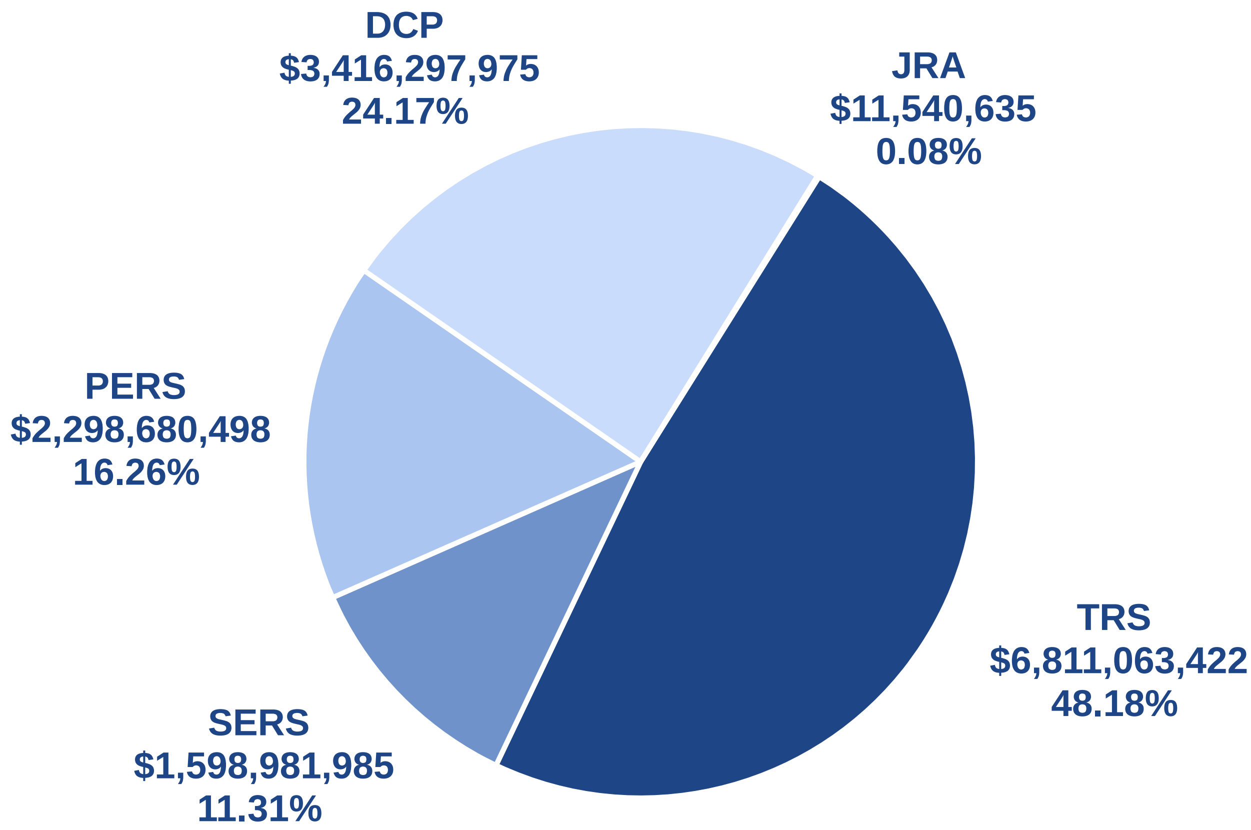
Appendix:
Washington State
Defined Contribution Programs

Teachers' Retirement System (TRS)
School Employees' Retirement System (SERS)
Public Employees' Retirement System (PERS)
Deferred Compensation Plan (DCP)
Judicial Retirement Accounts (JRA)

Defined Contribution Plans

September 30, 2015

Total defined contribution assets under management: $14.1 billion



How are Investment Options Chosen?

Investor behavior:

- Too many options can cause confusion and/or lack of participation.
- Over 60 percent of participants need/want help; less than 10 percent are “active” investors.
- Majority will make changes very infrequently.
- Typical investor uses between three and four options.

Menu Design:

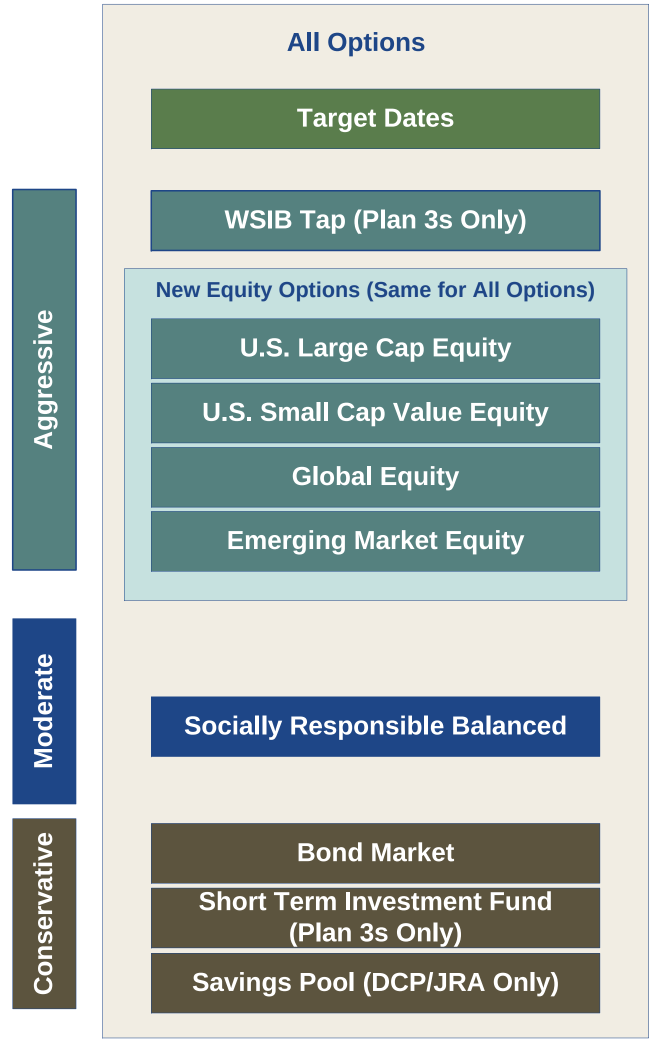
- Keep it simple.
- Provide one-step options.
- Provide simple, low-cost building blocks that leverage our strengths for those who do want to direct their own investments.
- Can’t be all things to all people, and trying to be could result in diminished outcomes for most people.

Defined Contribution Options

Plans 3, Deferred Compensation Program, and Judicial Retirement Account

Current investment options offered are:

- Retirement Strategy Funds
- Total Allocation Portfolio (TAP) (Plans 3 only)
- Socially Responsible Balanced Fund
- Short Term Investment Fund (Plans 3 only) or Savings Pool (DCP and JRA)
- Bond Fund
- U.S. Large Cap Equity
- U.S. Small Cap Value Equity
- Global Equity
- Emerging Markets Equity



Defined Contribution Plans Current Assets

September 30, 2015

Fund	Assets Under Management	Total %
Total Allocation Portfolio (TAP)	6,807,291,215	48.2%
Retirement Strategy Funds	3,329,987,461	23.6%
Savings Pool	872,766,515	6.2%
WSIB Bond Fund	624,637,014	4.4%
U.S. Large Cap Equity	1,107,572,439	7.8%
Short Term Investment Fund	488,067,534	3.5%
U.S. Small Cap Equity	350,194,632	2.5%
SRI Fund	225,150,024	1.6%
Global Equity	232,066,515	1.6%
Emerging Market Equity	98,831,166	0.7%
Total DC funds	$14,136,564,515	100.0%

Combined asset totals for Plans 3, DCP, and JRA