

# Global Trends in DC and Implications for the US DC Industry

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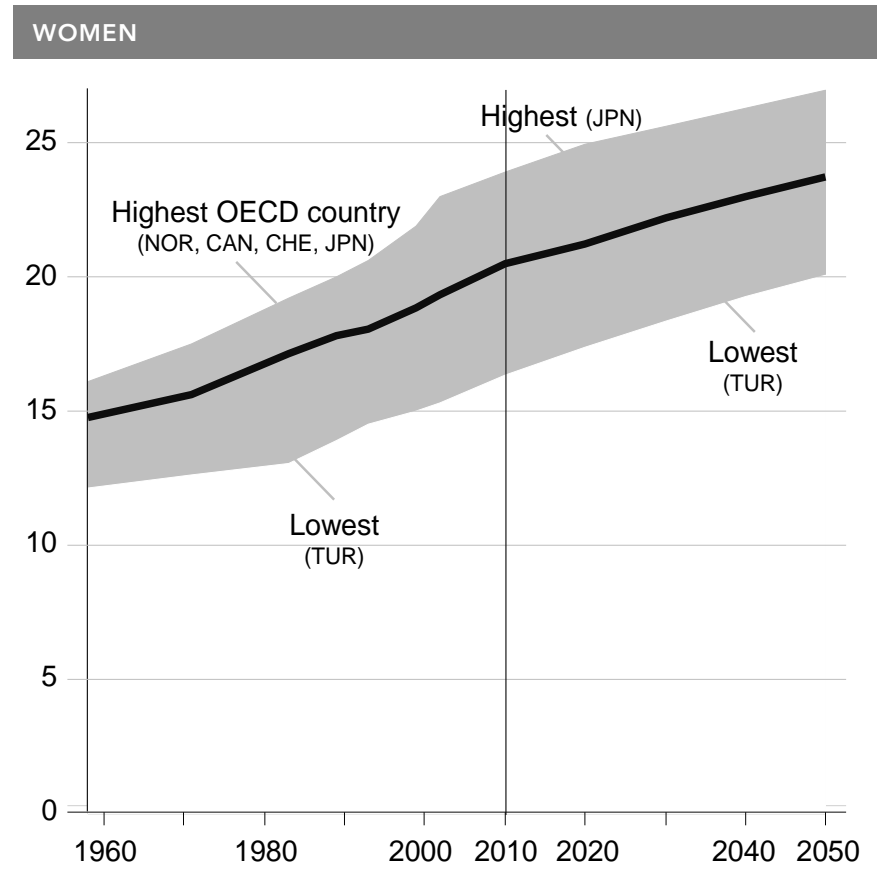
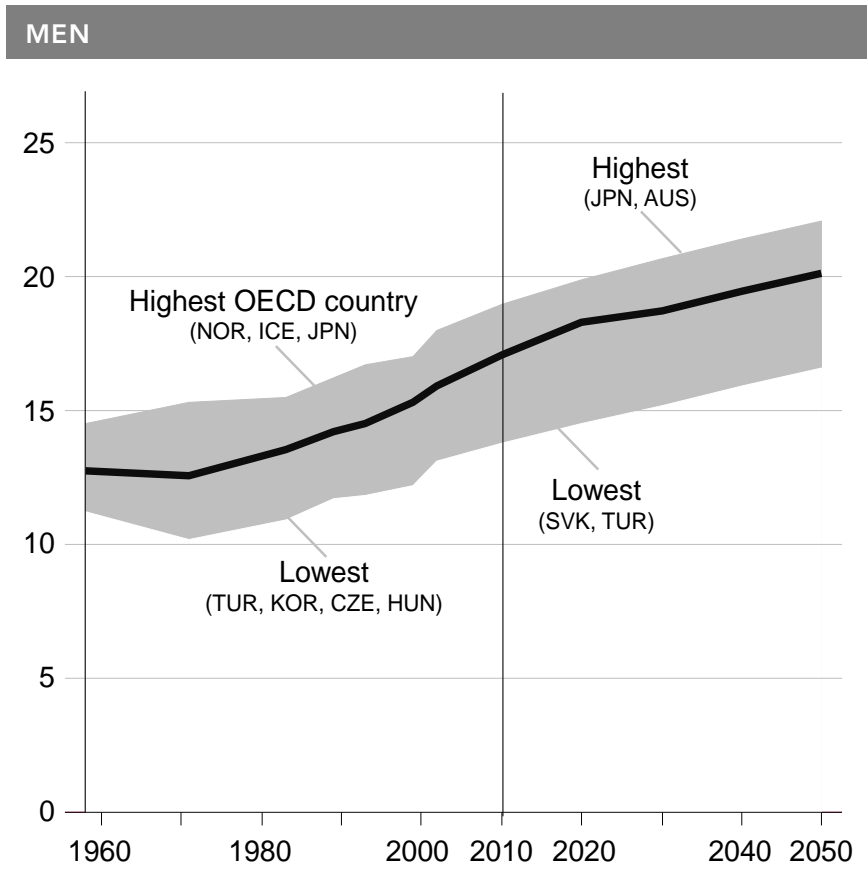
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# Agenda

1. Funding Retirement is a Global Challenge
2. Pillars of Retirement Funding
3. DB and DC
4. Global DC Trends
  - Enrollment and Contribution
  - Investment Returns
  - Lifetime Income (Longevity Prevention)
5. Implications for US DC Industry
6. Dimensional Solutions

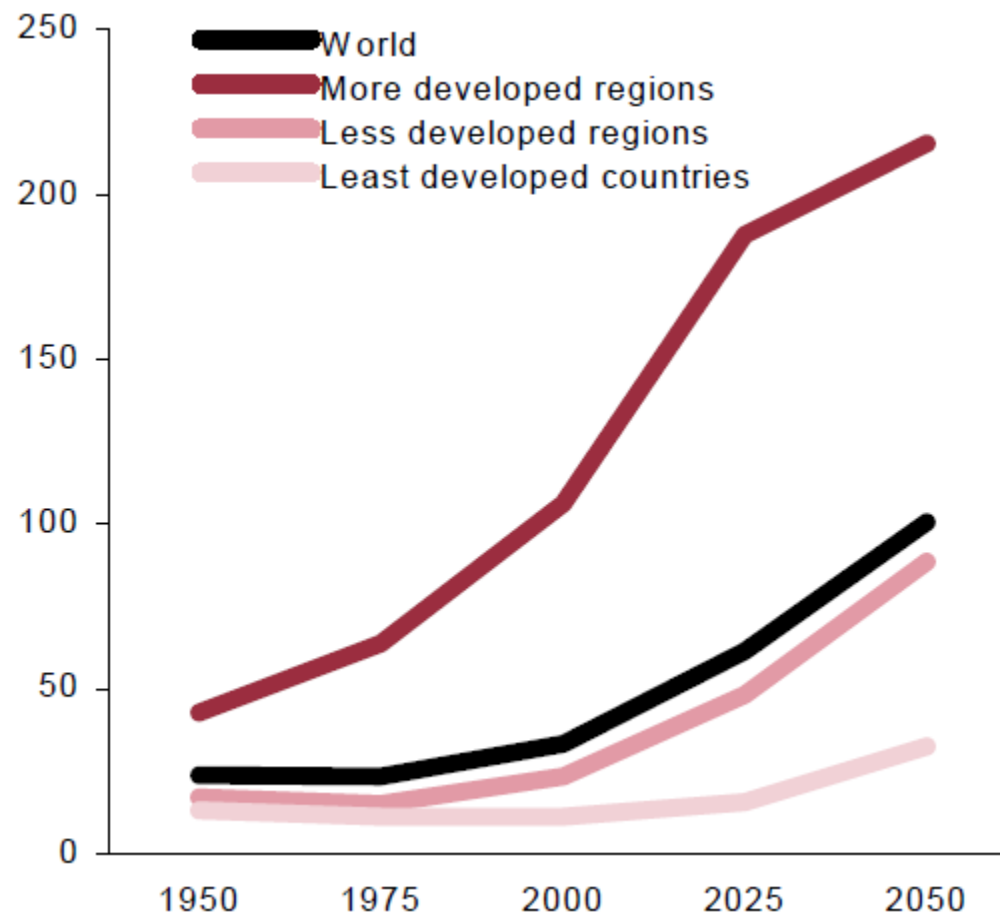
# Life Expectancy Projected to Continue to Increase

Additional years of life expectancy at age 65



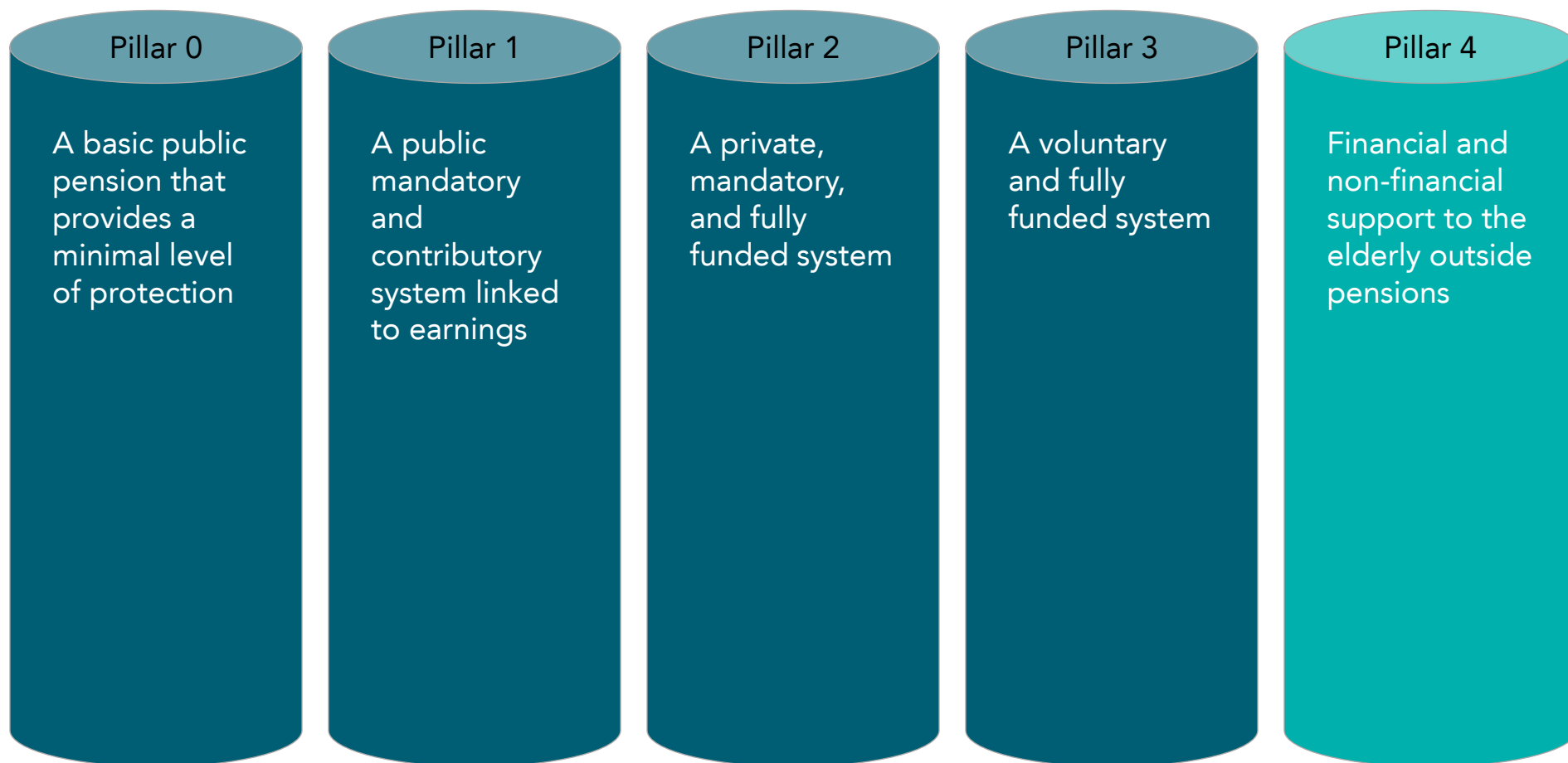
# Aging Population Around the World

Number of persons 65 or over per hundred children under 15; world and developed regions 1950–2050



# The Multi-Pillar Approach

Increasing reliance on pillars 2 and 3

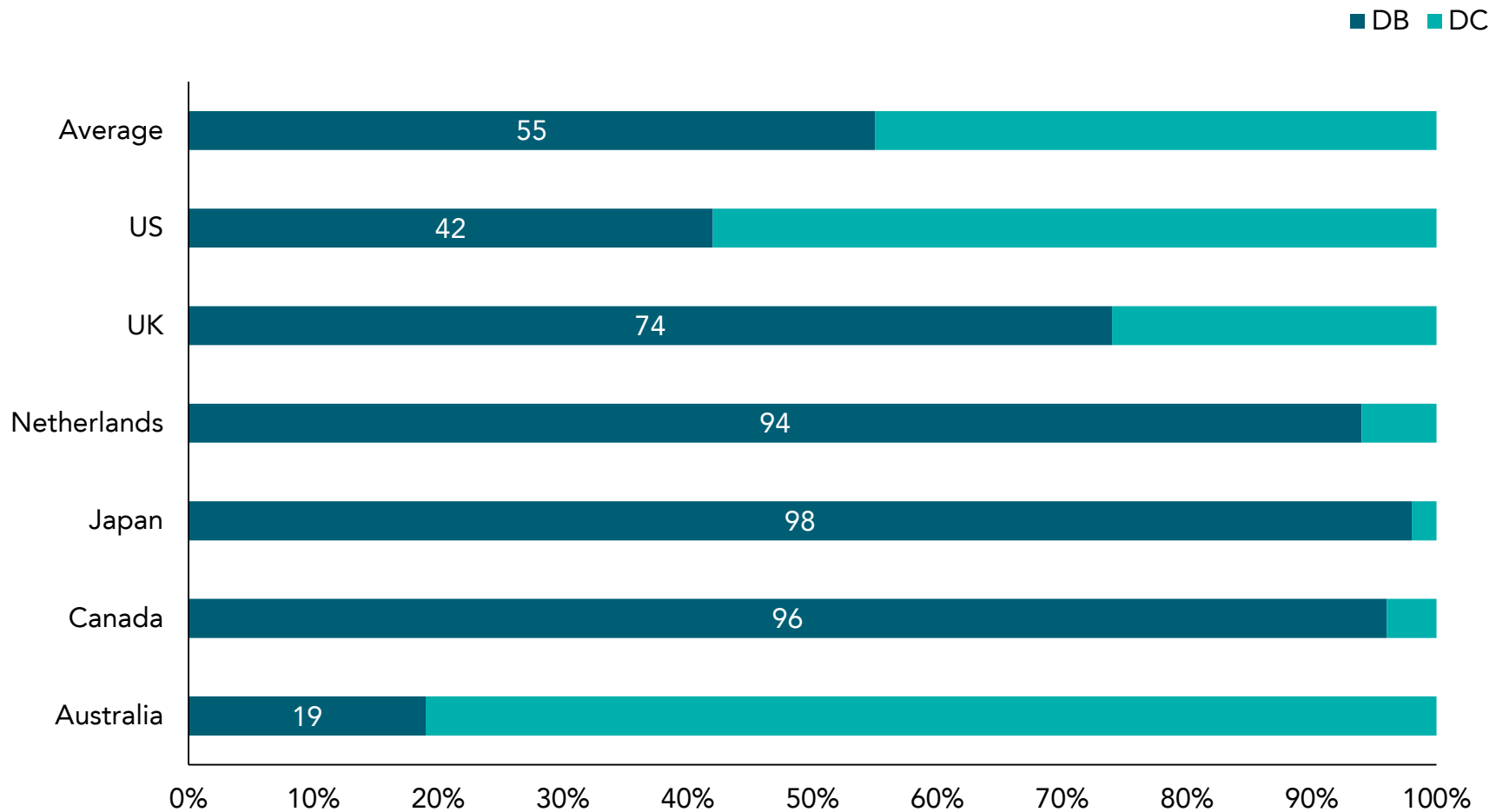


# Mercer Global Pension Index (2012)



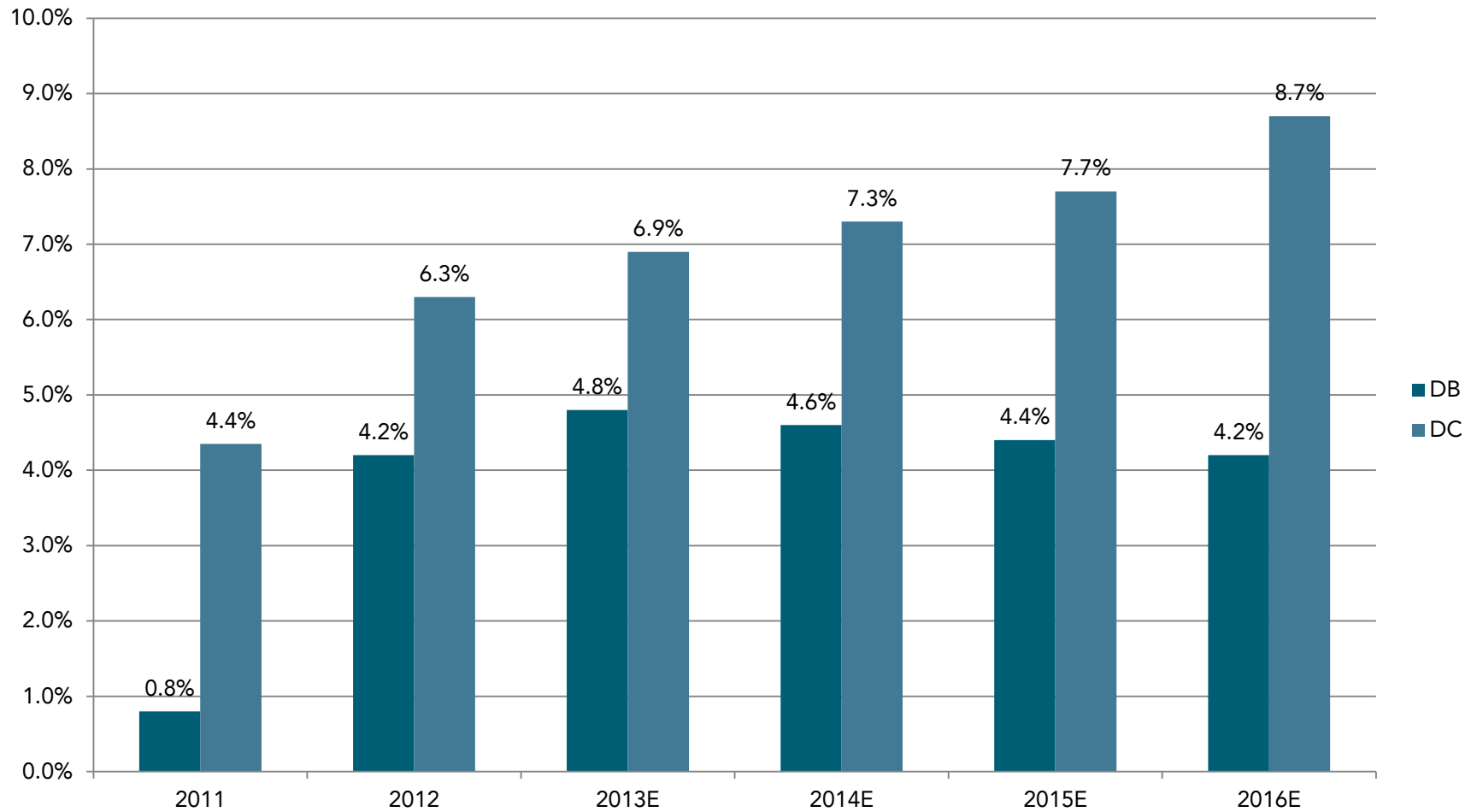
# DB Assets Represent 55% on Average

Global pension assets as of December 2012



# Growth Rate of Global Retirement Assets

DC assets are expected to grow faster than DB





# DB & DC: Employer and Employee Responsibilities

	Employer Responsible	Employee Responsible
Contribution	DB	DC
Investment Management	DB	DC
Longevity Management	DB	DC

DB plan funding status is under pressure.

- Increase in life expectancy
- Low interest rate
- Lower investment returns
- Insufficient contributions/poor investment management
- Inadequate regulatory funding requirements

The average funding status of the largest 100 DB plans in U.S. is 80.6%; only 9 plans fully funded.<sup>1</sup>

54% of companies in the UK now provide DC pensions only, with a further 41% of companies in transition.<sup>2</sup>

1. Pension and Investment, April 29, 2013.  
 2. AEGON Global Pension View (March 2013)

# Re-inventing the DB Plan

Defined Ambition Plan (Netherlands) & Adjustable Pension Plan (U.S.)

By converting to DC plans, DB plans achieve risk relief by transferring risks to employees. However, employees often do not understand and may not be able to deal with these risks.

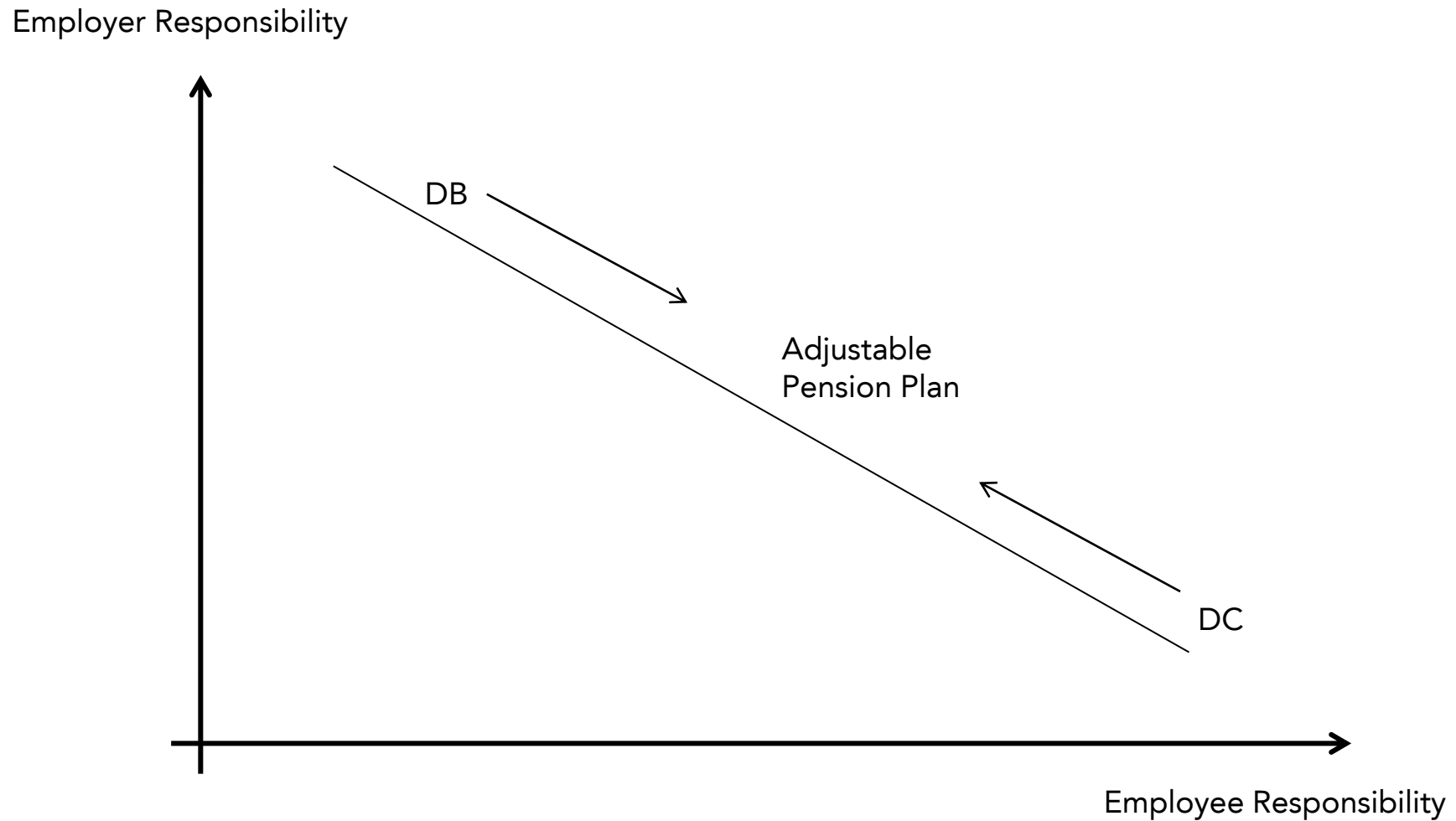
**The Dutch government developed a mechanism for the automatic adjustment of pension rights, benefits, and targeted retirement age**

- DA pension contracts fix employer contributions at the present level.
- If a Dutch DB pension plan is unable to meet its pension promise, it may lower pensions benefits (as a last resort) in order to become fully funded again.
- Currently working with a few major pension funds on a pilot project, and could become widely adopted in a few years

**Adjustable Pension Plan in U.S.: Pension benefit adjusted based on investment performance**

- Two DB plans in process of adopting it; pending IRS approval.

# Adjustable Pension Plan: The New DB or New DC?



# DC Plan: Sustainability vs. Adequacy

Sustainability is not an issue for DC plan sponsors (always fully funded).

Three main factors determine retirement income adequacy in DC plans:

1. Level of contributions
2. Investment returns
3. Price of lifetime income (including longevity protection)

In addition, the length of the contribution and retirement period also has a strong impact on the adequacy.

# Trends in DC Enrollment and Contribution

From voluntary to auto to mandatory

Voluntary	Auto Enroll/ Defer/Escalation	Mandatory
	US →	2006 PPA created safe harbor for auto-enroll/defer/escalation, but majority of default contribution rate is between 3% and 6%, not enough to meet long-term retirement needs. <b>58% of US workers are not enrolled in a DB or DC pension.</b> <sup>1</sup>
		UK → ↑ 2008 Pension Act: <b>Auto-enrollment and minimum contribution started in 2012.</b> By 2018, all employees must have enrolled. Minimum contribution in 2012 at 2% (employer contributes at least 1%) to 2018 at 8% (employer contributes to at least 3%; 1% paid by the government directly to the scheme as tax relief). <sup>2</sup>
		Australia ↑ Compulsory superannuation savings since 1992. Current employee contribution rate of 9% will increase to 12% by July 2019. <sup>3</sup>
		Singapore ↑ Central Provident Fund (CPF) started in 1955. Currently, employees contribute 20%; employer contributes 16% (up to SGD \$85k annual income level). <sup>4</sup>
		Hong Kong Mandatory Provident Fund (MPF) started in 2000. Employer contributes 5%; employees contribute 5% (up to income level of HK \$300k). Contribution is tax-deductible. <sup>5</sup>

Sources: 1. New York Times, May 15, 2013 & 401k-Fix-It Guide, Internal Revenue Service (2013). 2. Automatic Enrollment in the UK, Towers Watson (2013). 3. Australian superannuation, The Association of Superannuation Funds of Australia Limited (2013). 4. Employer's Guide to CPF, CPF Board (2013). 5. Mandatory Provident Fund Factsheet, Hong Kong Government (2013).

# Trends in Investment Strategies

From self-select to default to customized

Self-Select/ Conservative Default	Diversified Default	Customized Default
	US →	Most plan sponsors offer diversified default investment options. Target date funds 53%; lifestyle/balanced funds 39%. <sup>1</sup>
	UK →	91% use lifestyle/balanced funds, while 3% use target date funds; target date funds becoming popular. <sup>2</sup> The government has the power to establish a fee cap.
	Australia →	Superannuation offers balanced and lifecycle portfolios for default options. <sup>3</sup>
Singapore →		The CPF interest rate (return) is calculated periodically. Currently, 4% for retirement accounts. Additional investment scheme to invest in stocks, unit trusts, government bonds, investment-linked insurance policies (ILPs), exchange traded funds, (ETFs) and gold. <sup>4</sup>
Hong Kong →		Each MPF scheme is required by law to offer at a minimum an MPF Conservative Fund. In addition, all MPF schemes provide multiple fund choices, ranging from low-risk options to higher-risk options. <sup>5</sup>

# UK National Employment Savings Trust (NEST)



For Institutional and Professional Investors only

## NEST 2055 Retirement Fund

As at December 2012 – This fund is in NEST's Foundation phase

**Fund facts**

Name: NEST 2055 Retirement Fund

Launch date: July 2011

Total size of underlying funds: £4.8bn

Fund size: Less than £1m

Contribution charge: 1.8%

Annual management charge/ Total expense ratio: 0.3%

Pricing basis: Single price

Valuation and dealing frequency: Each working day (excludes weekends and bank holidays in the UK)

Fund administrator: State Street Bank

**Key points**

**55.5%** return-seeking assets

For more information please contact us on **0300 303 1949** or visit our website [www.nestpensions.org.uk](http://www.nestpensions.org.uk)

**Commentary**

**Mark Fawcett**  
Chief Investment Officer

The summer rally in markets continued through Q4. Improved investor sentiment suggests that if the challenges affecting global economies hadn't necessarily been resolved they had at least stabilised to the point where it became possible to identify the opportunities. Corporate bonds continued to rally while government bonds eased off slightly. Yields in longer-dated government bonds in the US, UK and Germany rose as investors began looking to the potential of lower credit-quality government debt.

We've increased the level of investment risk across all the phases of the NEST Retirement Date Funds to take advantage of the positive market environment. For this Foundation phase fund, this has increased our target volatility to 7 per cent from the previous target of 6 per cent. We've added slightly to our holdings of corporate bonds and significantly to shares at the expense of cash and gilts. Shares now comprise over 35 per cent of this fund.

We also added to our holdings of index-linked gilts after prices dropped when a review of the Retail Price Index calculation was announced.

In the coming months we think there'll be further opportunities to increase exposure to shares. In the US, while the 'fiscal cliff' federal budget deadline has dominated the economic news, the underlying data is more encouraging. Recent developments in the utilisation of shale gas could see the US become virtually self-sufficient for energy for the foreseeable future. A combination of relatively cheap and stable energy costs with technological improvements has led to a pick-up of investment in the industrial sector.

On the other hand we're still concerned about downside risk in Europe, as headline GDP growth in Germany appears to be on a downward trend.

We'll be monitoring these situations carefully to ensure we give our members the best opportunities for growth while protecting their retirement pots.

**Fund objectives**

**Foundation phase**

- preserve capital while seeking sufficient return to match inflation and cover all scheme charges
- target a long-term volatility average of 7 per cent
- significantly reduce the likelihood of extreme investment shocks
- take appropriate risk at appropriate times, taking account of current economic and market conditions

During our research, younger savers told us that they would react very negatively to falls in the value of their savings. For this reason, members who join in their 20s will typically spend up to five years in the Foundation phase. In this phase we concentrate on steadily growing the balance rather than exposing our members to substantial investment risk. This lower-volatility approach still aims to at least match inflation after taking charges into account. We use the Consumer Price Index measure for inflation.

**Asset allocation**

**Top 10 biggest shareholdings**

1	APPLE	1.6%
2	EXXON MOBIL	1.3%
3	MICROSOFT	0.7%
4	GENERAL ELECTRIC	0.7%
5	IBM	0.7%
6	NESTLÉ	0.7%
7	CHEVRON	0.7%
8	SAMSUNG	0.7%
9	HSBC	0.6%
10	JOHNSON & JOHNSON	0.6%

**Geographical breakdown of equity**

- 2008 Pension Act
- Set up by UK government as a low-cost, not-for-profit plan provider for employer and employee
- No charges for employers to set up and use NEST
- Members will pay a 0.3% annual management charge, compared to current typical charge of around 0.8%.
- Investment options
  - Default into NEST Retirement Date Fund (one for every year, up to the state pension age)
  - Additional funds considering ethical, religious, and risk preferences

# Trends in Retirement Income


From systematic withdrawal to retirement income to customized lifetime income

Systematic Withdrawal	Offers Pooled Annuity as Income Option	Customized Lifetime Income from Accumulation to Disbursement
	US →	Options to take out as a lump sum or systematic withdrawal, or buy annuity. Very few plans offer in-plan retirement income solutions. <sup>1</sup>
	UK →	Options to take out as a lump sum or systematic withdrawal, or buy annuity <sup>2</sup>
	Australia	Options to take out as a lump sum or systematic withdrawal, or buy annuity <sup>3</sup>
	Singapore→	Required to keep minimum balance in CPF after retirement. In 2007, rolled out CPF lifelong income scheme that will provide a monthly payout starting from retirement age, for as long as the participant lives. Starting 2012, employee has to annuitize a minimum amount upon retirement. <sup>4</sup>
Hong Kong		Withdrawal of accrued benefits is only allowed when scheme members reach the retirement age of 65. <sup>5</sup>



# Singapore CPF for Life

**LIFE Standard Plan**



- For those who prefer higher monthly payouts
- Lower bequests
- Default plan

**LIFE Basic Plan**



- For those who prefer higher bequests
- Lower monthly payouts

Established in 2007 as an option, starting 2012 employee has to annuitize minimum amount at retirement.

- Lifetime pension payment is adjusted for mortality experience each year.
- CPF LIFE monies are invested in special Singapore government bonds, which have a guaranteed minimum interest rate of 2.5%.
- CPF LIFE offers two plans—each provides a different combination of tradeoffs between the amount of monthly payouts and the bequest.

# Lessons Learned: Wish List for US DC Industry

## Mandatory enrollment and contributions

- 58% of US workers have not enrolled in either DB or DC plan.
- Current average default of 3%–6% contribution rate is not enough to meet retirement income needs.<sup>1</sup>

## Low cost institutional-quality default investment solution

- The cost of investment options for DC plans has been decreasing.
- Average target date fund expense ratio is 86 bps (66 bps for asset weighted average).<sup>2</sup>

## Customized lifetime income solution from accumulation through retirement

- Liability-driven investment approach and management of market risk
- Longevity risk is the next fat tail.

Sources:

1. 401k-Fix-It Guide, Internal Revenue Service (2013) and *New York Times*, May 15, 2013.

2. Target-Date Series Research Paper: 2012 Industry Survey, *Morningstar* (May 2012).

# Current and Potential Future Dimensional DC Solutions

## 1. Enrollment and contributions

- Auto enrollment and auto contribution escalation
- Research on “how much employee needs to save”

## 2. Institutional quality investment strategies

- Consistent approach and results
- Transparency and competitive costs

## 3. Managed Account Solutions: Retirement income focused

- Lifetime income focused
- Customized investment strategy for each individual
- Risk mitigation (relative to liability) throughout accumulation and disbursement

## 4. Longevity protection<sup>1</sup>

- Inflation-indexed annuity<sup>4</sup>
- Pure longevity insurance in the future

## 5. Capital preservation considerations

- Add variable maturity and global diversification in the short term fixed income space<sup>2</sup>

1. Currently, Dimensional Fund Advisors does not offer longevity protection or other insurance-based contracts or services

2. Diversification does not eliminate the risk of market loss.

3. Please see Disclosures for important information regarding Dimensional Managed DC.

4. Income from retirement payout (annuity) contract depends on the claims-paying ability and strength of the issuing insurance company.

# Current DC Alternatives for Short Term Fixed Income

## Money Market Funds

- Mutual funds that invest in high quality, short-term fixed income
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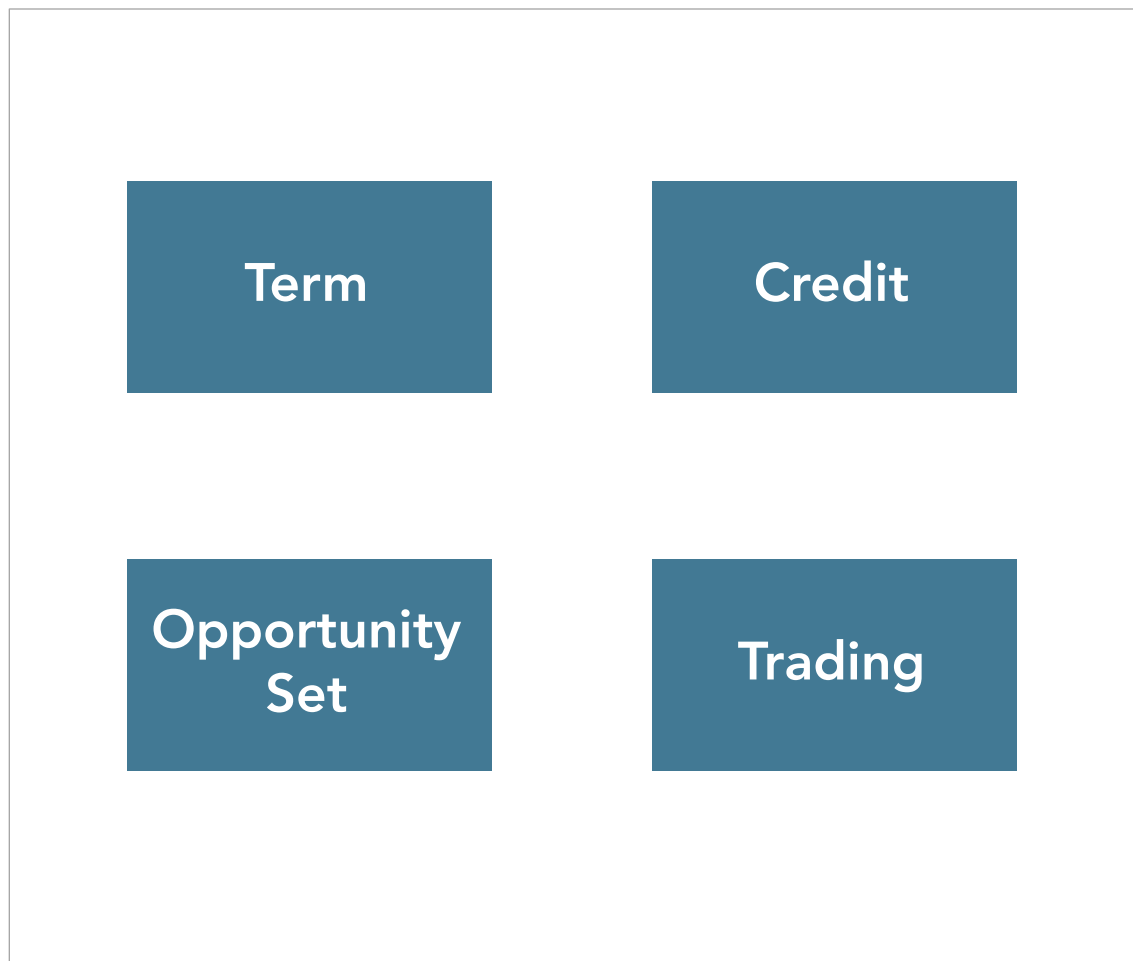
## Stable Value

- Separate accounts that invest in a variety of bonds and protect against downside risk through an insurance contract
- 

## Ultra-short Bond Funds

- Mutual funds that are subject to manager discretion

# Goals and Trade-offs for Short Term Fixed Income



## Investor Goals

- Capital Preservation
  - Ongoing capital preservation and liquidity management
  - Long-term capital preservation
- Customize overall portfolio volatility
  - Adjust asset mix to match volatility preferences
- Liability management
  - Trading off risks with expected returns

## Investment Trade-offs

- Possibility for customized investment solutions depending on plan participant needs and preferences
  - What can a plan sponsor control?

# Dimensional's approach to pursuing term premium: Variable Maturity

## Origin

- Eugene Fama's early work on efficiency of fixed income markets
- Shape of the yield curve contains information on expected returns on bonds with different maturities

## Definitions

- Term Spread: Difference between Long and Short maturity bond yields
- Term Premium: Difference between Long and Short maturity bond returns
- $E(\text{Return}) = \text{Yield} - \text{Expected Loss for Default}$

## Investment Risks

- Credit and term risk of securities in portfolio

# Global Opportunity Set Enhances Diversification

Uncorrelated changes in term structures across countries can reduce volatility

## CHANGES IN SHORT-TERM YIELDS: CORRELATIONS WITH THE US

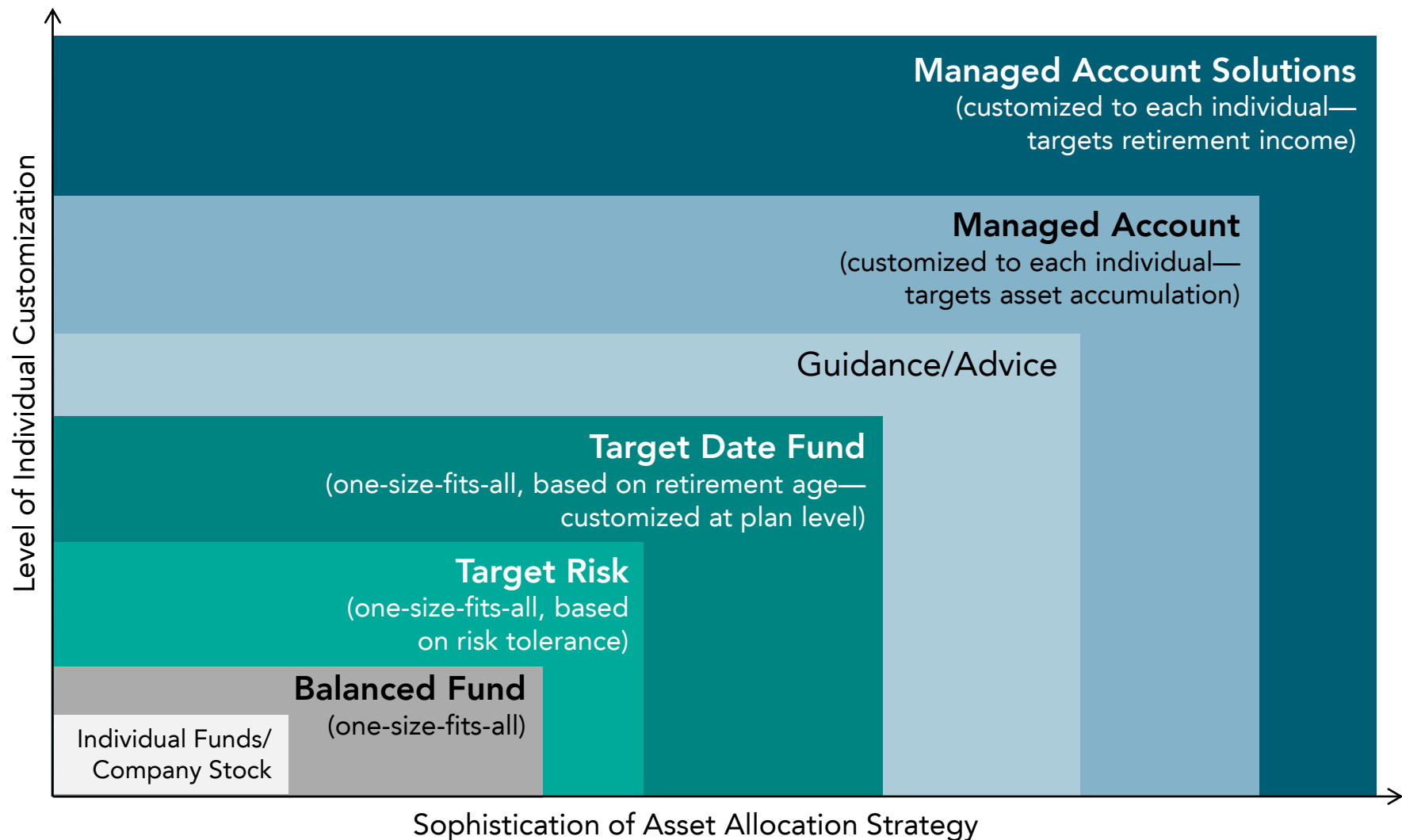
	Australia	Canada	Switzerland	Germany/EMU	UK	Japan
1985–2012	0.44	0.53	0.29	0.38	0.39	0.27
1999–2012	0.35	0.42	0.28	0.22	0.29	0.08

## 1–3 YEAR INDICES: 1985–2012

	US	WGBI (hedged)
Avg. Returns (monthly)	0.47%	0.46%
Std. Dev. (monthly)	0.54%	0.41%
Reduction in volatility		23%

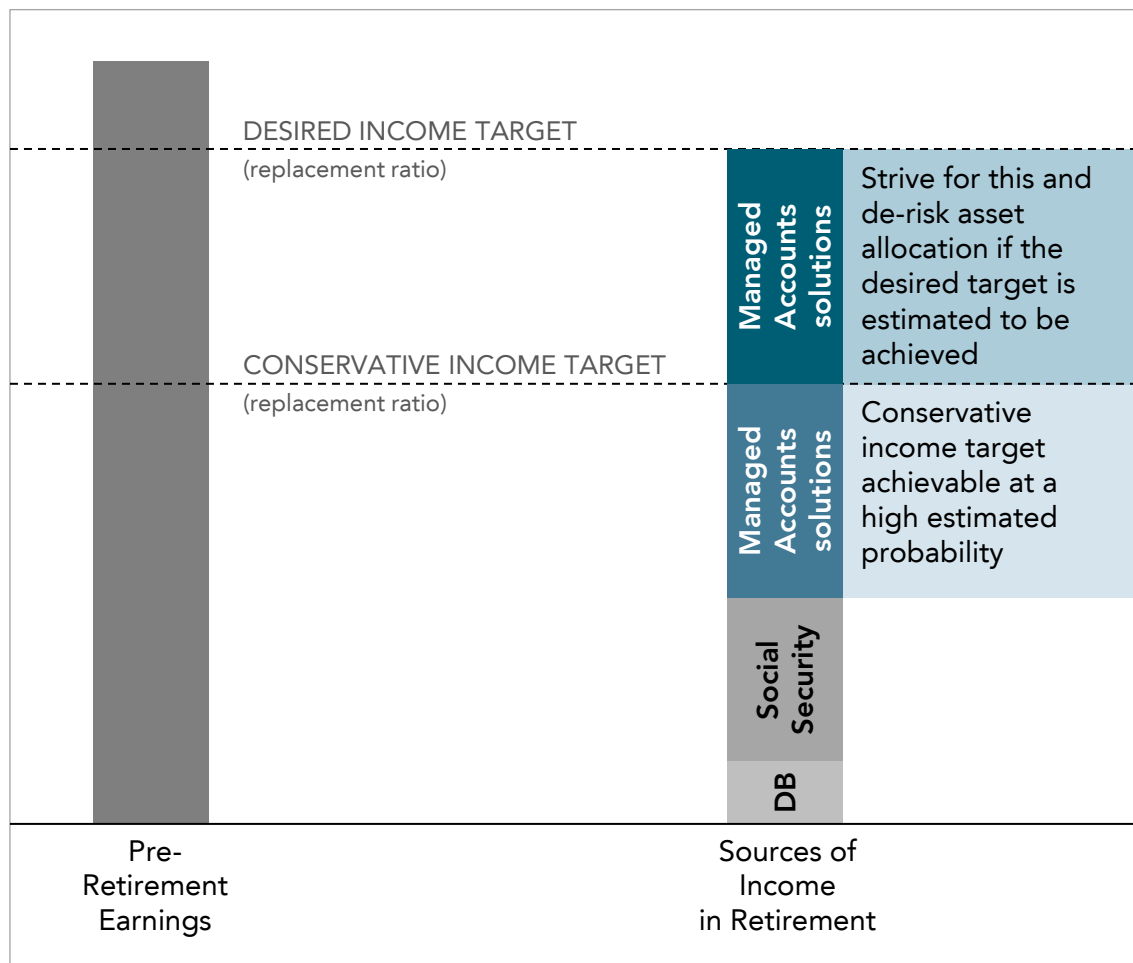
# Innovative Default Solutions: Managed Accounts Solutions

Customized, liability-driven portfolio and dynamic risk management over lifecycle





# Managed Accounts Objective Function



- Aim to achieve at least the conservative income target and, preferably, the desired income target.
- Participants can adjust income targets, retirement age, and contribution rates as they seek to achieve these goals.

# Summary

1. Funding retirement is a global challenge.
2. Both DB and DC need to remake themselves for the next generation.
3. For DC plans, increasing number of countries are:
  - Adopting mandatory enrollment and contribution programs
  - Adopting low cost, institutional-quality investment solutions
  - Adopting lifetime income options
4. Dimensional has next-generation solutions for DC plan sponsors and participants.
5. Recent studies highlight Plan Sponsors concerns with the risks, lock up periods, and participant communication associated with Stable Value
  - Consider adding variable maturity strategies within your “capital preservation” bucket as an alternative to Stable Value or money market funds
  - Go “global”; offer your participants the benefits of global diversification in your fixed income menu

# Disclosures

Through Dimensional Managed DC, Dimensional SmartNest is authorized to exercise investment discretion with respect to the eligible assets attributable to a participant's retirement account, including such additional assets as may result from transactions in, contributions to and transfers of assets into the participant's account.

Upon enrolling, Dimensional SmartNest determines how a participant's account will be allocated among the investment options available within Dimensional Managed DC based on various factors including the participant's time horizon, income targets, and other retirement account information provided to Dimensional Managed DC on the participant's behalf. Dimensional SmartNest makes all the allocations for the participant's account with respect to eligible assets. This includes future contributions. Eligible assets will be reallocated regularly in response to changes in interest rates, investment performance, inflation, and your retirement account information and income goals.

The goal of Dimensional Managed DC is not to maximize assets, but to seek to improve the estimated probability of reaching a Desired Income target in retirement and reduce the estimated probability of receiving less than a participant's Conservative Income target in retirement. Dimensional Managed DC communicates in terms of a participant's retirement income goals and not only the value of the participant's account balance. Dimensional Managed DC assumes a purchase of a lifetime, inflation-protected income stream at retirement date. Income from a retirement payout (annuity) contract depends on the claims-paying ability and strength of the issuing insurance company. An income stream purchased with the assets in a participant's account will only provide a portion of the income reflected in the target income goals.

Both the Conservative and Desired Income targets assume a participant will receive, and thus reflect, expected income from the participant's Social Security benefit and any defined benefit pensions the participant have indicated. The income from these retirement sources alone may not preserve the participant's current standard of living in retirement. Thus, a participant may wish to consider other avenues for additional personal savings.

# Disclosures

Dimensional Managed DC uses a liability-driven investment strategy (“LDI”) in managing a participant's eligible assets. Within this framework, Dimensional Managed DC creates a balance sheet for a participant's account that matches the assets communicated to Dimensional Managed DC (account balance, expected future contributions, estimated Social Security, and any other expected pension income) with the participant's liabilities (your retirement income goals). An asset allocation strategy is then designed to increase the estimated probability of reaching the participant's retirement account's income goals. The strategy is then dynamically managed over time with changes in interest rates and equity market performance.

As the estimated probability of reaching the participant's Desired Income target increases, Dimensional Managed DC automatically reduces the allocation to equity funds and increases exposure to bond funds to seek to maintain or increase the estimated probability of achieving the participant's Desired Income target.

## Disclosure & Disclaimer

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# Appendix

# Targets Income Goal from Integrated Perspective

## Managed Accounts

### RETIREMENT ACCOUNT BALANCE SHEET

Assets	Liabilities
Current DC account balance	Conservative income target
Projected future contributions (human capital)	Surplus available for desired income target
Expected basic state pension (Social Security)	
Expected defined benefit income benefit	

- Each participant has a different financial account profile—no one is “average.”
- Creates an investment strategy for each participant based on his or her retirement account characteristics.
- Retirement account balance sheet integrates certain (known) sources of retirement income.

# Sample User Interface

If participants engage, ask them practical questions

## Customization

You may customize your account by moving the sliders below. You may change your income targets, or make other changes to make it more likely that you will be able to achieve your retirement income goals.

**Current Income** \$6,250 per month (before taxes)

**1** \$2,840

**Desired Income Target** ⓘ  
\$2,840 per month (before taxes)

**2** \$2,000

**Conservative Income Target** ⓘ  
\$2,000 per month (before taxes)

**3** 3%

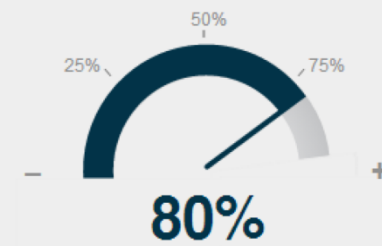
**Pre-tax Contributions** ⓘ  
3% of your pay Change to \$

ADD CONTRIBUTION

**4** 67

**Retirement Age** ⓘ  
67 years

**Estimated probability of reaching your desired income target of \$2,840 per month.**



80%

The probability of achieving your conservative income target of \$2,000 a month is estimated at 96%.

- Working until age 67
- Your contributions of \$188 per month
- Employer contributions of \$94 per month
- Includes other retirement income of \$1,982

Reset to original settings

Important: Estimated probabilities are hypothetical in nature, do not reflect actual investment results and are not guaranteed.