TOWERS PERRIN

HR SERVICES

Canadian Pension and Benefits Institute (CPBI)

Defined Contribution Risks:

Pension Adequacy and Replacement Ratios

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Recent Press Coverage – National Post : October 24, 2007

"It has been axiomatic that retirees can get by on 70% of the income generated in their working years"

"Fidelity Investments Canada suggests that 80% or 85% might be a more realistic target"

"If the objective is to maintain people in the manner to which they're accustomed, then 50% is not far off" — Hamilton, Mercer

"Many will live 30 years or more in retirement. The risk they face is outliving their money" — Professor Moshe Milevsky, York University

"The focus should be on meeting expenses, not income" — Baldwin, TE Wealth

Recent Press Coverage – Globe & Mail : November 1, 2007

"When you delve into how much money you need to retire comfortably, what strikes you is the lack of definitive answers"

"50% of your working income works if you live frugally, travel little and minimize luxuries like golf, an extra car, theatre, cruises. Is that the way you wish to live after you retire?" – Wayne Norma, Retiree, Toronto"

"In my situation, at the age of 63, the house is mortgage-free and our two children are grown and out of the house. These factors and any other debt obligations are significant considerations to a retiree's income requirements" -- Ed Aird, Port Coquitlam, B.C., Retired for 14 months and comfortable living on just over 50 per cent of his pre-retirement income (note: he has taken a two-week holiday to Jamaica).

"What the hell would we do with 80%..either live a life far higher than we do currently, or invest with Fidelity who can skim their cut" – Jim Maron, mid-40s, Richmond Hill, Ontario – he maintains that 55% to 65% of his expenses will not be there at retirement

"The net result for these people: If they made $150,000 before retirement, they could probably get by with about $80,000 in retirement income" -- Ted Rechtshaffen, President and CEO, TriDelta Financial Partners

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Question to test your knowledge

- In your opinion, how much retirement income (as a percentage of pre-retirement earnings) do you or your employees require during retirement:

  A. 50% - 54%
  C. 55% - 66%
  D. 67% - 69%
  E. 70% - 80%
  F. All of the above

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Agenda

- Understanding replacement ratios
- How much is adequate retirement income?
- Managing employee expectations
- “Bullet Proofing” pension adequacy risk
- Questions

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Basics : Replacement Ratios

- Simple Definition
  - Replacement Ratio: Pension income at retirement as a percentage of earnings prior to retirement
  - Example:
    - Pension at retirement (e.g., at 65 years): $20,000 per year
    - Earnings prior to retirement (e.g., at 64 11/12 years): $40,000 per year
    - Replacement ratio: 20,000/40,000 = 50%
- Pension Income at retirement (“Three-legged” approach)
  - C/QPP and OAS
  - Employer-provided pension and benefits
  - RRSP and personal savings
- Earnings prior to retirement
  - Base pay
  - Other pay (overtime, shift pay, etc)
  - Short-term Incentives

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How much is adequate retirement income?

- Conventional wisdom: a replacement ratio of 70% at a point in time
  - Basic replacement ratio determined as 100% of pre-retirement 'earnings' less working expenses, tax differences and savings
- Enhanced replacement ratios consider:
  - Spending patterns for pre-retirees (55-64), retirees(65-74) and seniors (75+)
  - Expenditures depend on factors such as:
    - Composition of Income (earnings, pension, government, savings)
    - Family composition and size (single, couples with/without children, relatives)
    - Type and size of household (renter, owner with/without mortgage)
    - Locality: rural or urban
    - Net worth of household
  - Recent past history of expenditures provide some guidance on future expenditures

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Shifting Your Focus : Paying Attention to Information

- What is the pattern that differentiates the two groups?

  Group 1 : A E F H I
  Group 2 : B C D G J

  If you recognize it, which group would you put “K” and “R” ?

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Spending Patterns of Retirees (All households)

Average total expenditure (2005)*

	Canada (All)	55 to 64	65 to 74	75 Plus
Food	$ 7,100	10,300	8,700	7,600
Housing	12,600	14,600	13,500	13,100
Transportation	9,100	8,900	6,300	3,600
Recreation	3,900	2,500	1,800	1,000
Health Care	1,800	1,400	1,100	1,000
Other / Taxes	32,300	18,800	6,300	4,600
Total	66,800	56,500	37,700	30,900

Canada (All) – Average expenditure of all individuals

*Sources :
Statistics Canada – Spending patterns in Canada, 2005
Statistics Canada - Spending Patterns in Canada and US - Chawla, September 2007 Perspectives
Statistics Canada - Shifts in Spending Patterns of Older Canadians - Chawla, December 2005 Perspectives
Analysis/extrapolations/approximations from 2003 to 2005 – Lalani - November 2007

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Comparison on Income and Expenditure

	Canada (All)	55 to 64	65 to 74	75 Plus
Mean Income	$ 69,500	62,800	41,400	30,100
Expenditure	$ 66,800	56,500	37,700	30,900
Expenses*	n/a	46,800	37,800	28,100

*retirement expenses used for calculation of replacement ratios adjusted for work expenses, tax differences and savings

Replacement Ratios (RR)	67%	54%	40%
'Traditional' RR	67%	67%	67%
Arithmetic Average RR	54%	54%	54%
'Actuarial Average' RR	58%	58%	58%
Conventional Wisdom	70%	70%	70%

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Recap - Replacement Ratios

- Conventional wisdom – 70% ratio may be conservative by most measures

	55 to 64	65 to 74	75 Plus
RR with future COLA** ** increases of 2% for 10 years	81%	66%	49%
Arithmetic Average (+COLA)	65%	65%	65%
Arithmetic Average (-COLA)	54%	54%	54%

- Replacement ratios (RR) must reflect patterns of spending/expenses over retirement years
  - Multiple RR provide a better insight into income adequacy
- There is no “one” acceptable RR
  - A customized RR for each individual (based on personal expense pattern) is ideal
- Expenditures track income closely
  - Individuals will spend up to their income level

Question to test your knowledge

- How much retirement income as a percentage of pre-retirement earnings – replacement ratio - does your employer plan deliver ?

  A. Less than 15%
  B. 15%- 24%
  C. 25% - 34%
  D. 35% - 44%
  E. 45% +
  F. Who cares!

Income Adequacy and DC Plans

- Towers Perrin Benefits Data Bank , 2007

Employer Contributions*	% of DC Plans
Less than 5%	50%
Exactly 5%	2%
Greater than 5%	48%

* Pure DC Plans (plans with no service schedule)

- Median Plans :
  - Defined Contribution (DC): Employer contribution = 5.0%
  - Defined Benefit (DB): 1.45% of Final Average Earnings

- Median DC plan delivers 1/3 to 1/2 of the benefit of the median DB plan for a career employee

Do you know what your retirement plan delivers?

Do your employees know what your retirement plan delvers?

What Replacement Ratio Does Your Retirement Plan Deliver?

For an employee retiring at **65** with pension payable to age 90 assuming a 7% per annum return and 3.0% per annum pay growth throughout the period; no tax limits applied. No C/QPP included.

Replacement Ratio Table

	Contribution Rate (% of Earnings)		
Years to Retirement	**5%**	**10%**	**15%**
5	**2%**	**4%**	**6%**
10	**4%**	**8%**	**12%**
20	**10%**	**20%**	**30%**
30	**19%**	**37%**	**56%**
35	**24%**	**48%**	**73%**

What Replacement Ratio Does Your Retirement Plan Deliver?

For an employee retiring at **60** with pension payable to age 90 assuming a 7% per annum return and 3.0% per annum pay growth throughout the period; no tax limits applied. No C/QPP included.

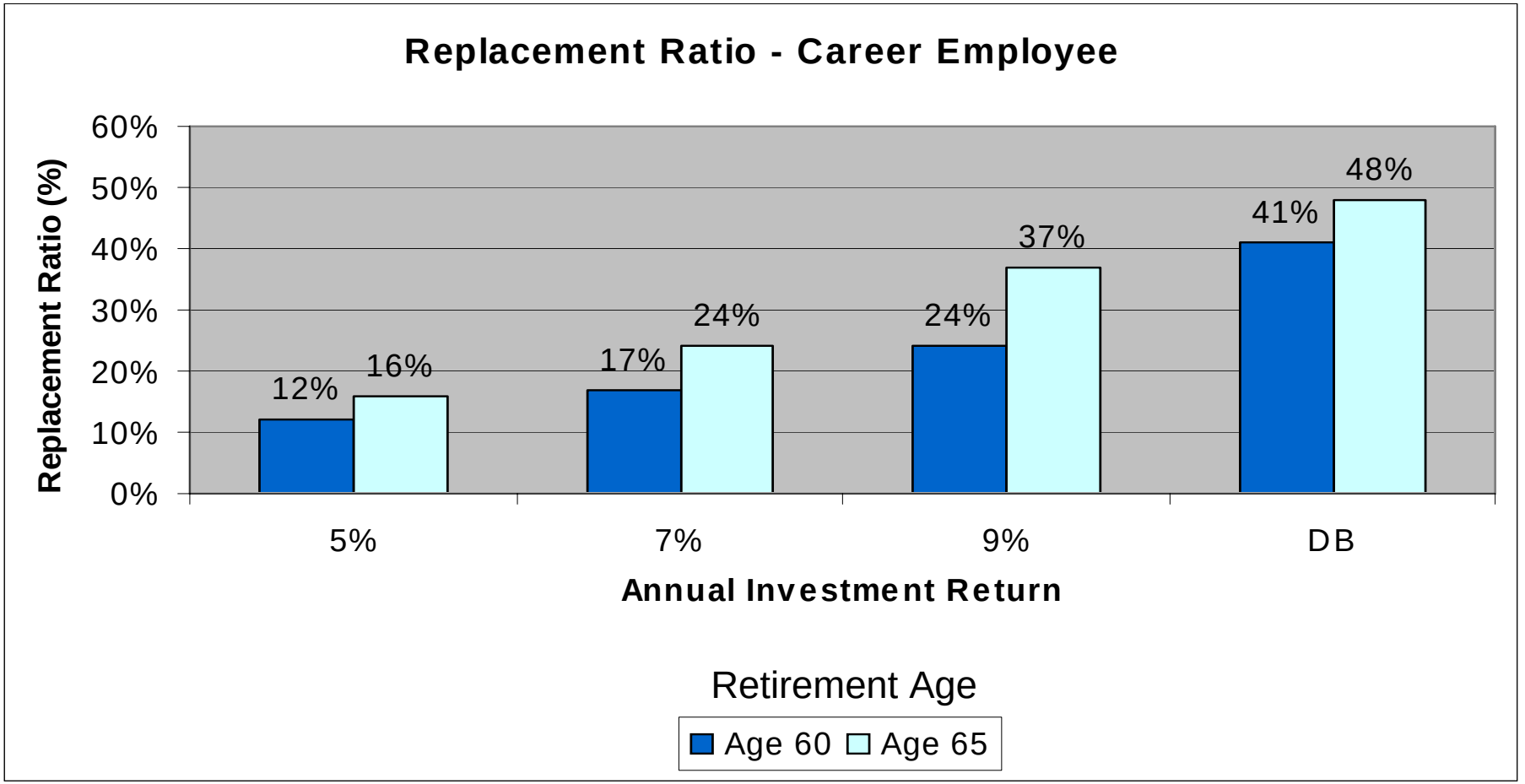
Replacement Ratio Table

	Contribution Rate (% of Earnings)		
Years to Retirement	**5%**	**10%**	**15%**
5	**2%**	**3%**	**5%**
10	**4%**	**7%**	**11%**
20	**9%**	**18%**	**27%**
30	**17%**	**33%**	**50%**
35	**22%**	**44%**	**66%**

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Income Adequacy – Comparison of median DC and DB plans

Career employee age 30 earning $60K, 5% DC plan, 3% pay growth, conversion to pension at 5.0% with 1% indexing; annuity certain to age 90; no tax limits applied. C/QPP not included.



Will Your Plan Deliver the Retirement Commitment?

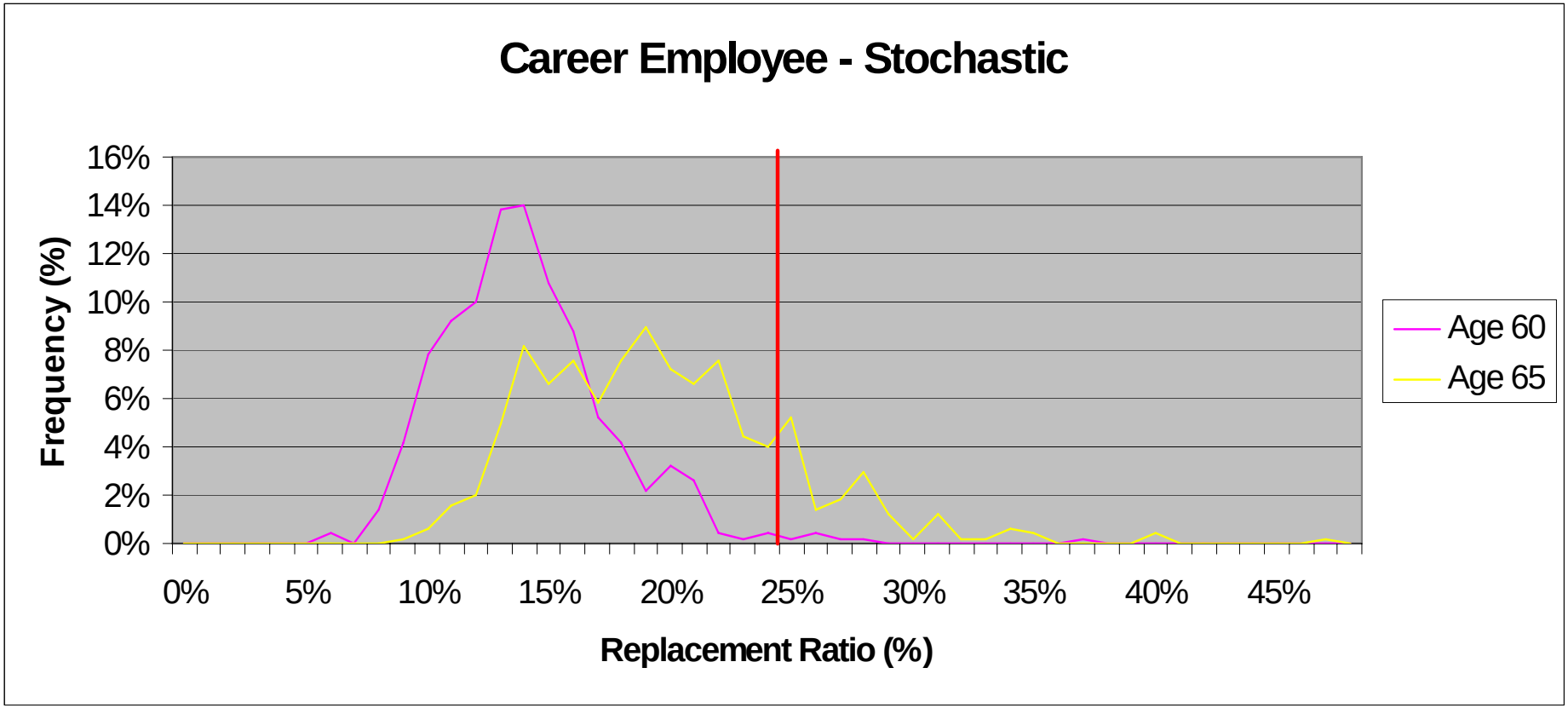
- DC Returns ending December 31, 2006 (Source: Towers Perrin client assignment)
  - Weighted average returns for large DC plans
  - Assumes assets are held for the full duration ('buy and hold')
    - One Year (2006) : 11.2%*
    - 5 year period : 7.3%*
    - 10 year period : 7.2%*

      * after investment expenses of 0.8% per year
- Rates achieved by DC Plan members have been 2% to 3% per year less than the above returns
  - Conservatism in investing their retirement assets
  - Selling funds in a declining market ('selling low')
  - Buying funds in a recovering market ('buying high')
  - Lack of discipline in managing money
- Can high single digit and double digit returns be achieved year after year?
  - What returns have your funds achieved?
  - What returns have your employees achieved?

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Will Your Plan Deliver the Retirement Commitment?

For an employee earning $60K today with pension payable to age 90 (5% conversion and 1% indexing) assuming stochastic returns and salary growth



Probability of a replacement ratio of at least 25% :
Age 65 : 16%
Age 60 : 1.2%

Contribution Rates to Attain Target Replacement Ratios

For an employee retiring at age **65** with pension payable to age 90 (5% conversion and 1% indexing) assuming a 7% per annum return and 3.0% per annum pay growth throughout the period; no tax limits applied. No C/QPP included.

Contribution Rate Table

	Target Replacement Ratio		
Years to Retirement	**50%**	**70%**	**90%**
20	**25%**	**35%**	**45%**
30	**14%**	**19%**	**24%**
35	**10%**	**14%**	**19%**

Lump Sum Balance to Attain Target Replacement Ratios

For an employee earning $60K today retiring at age **65** with pension payable to age 90 (5% conversion and 1% indexing) assuming a 7% per annum return and 3.0% per annum pay growth throughout the period; no tax limits applied. No C/QPP included.

Lump Sum Table (Future Dollars at age 65)

	Target Replacement Ratios		
Years to Retirement	**50%**	**70%**	**90%**
20	**$860,000**	**$1,210,000**	**$1, 560,000**
30	**$1,160,000**	**$1,630,000**	**$2,090,000**
35	**$1,350,000**	**$1,880,000**	**$2,420,000**

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Lump Sum Balance to Attain Target Replacement Ratios

For an employee earning $60K today retiring at age **60** with pension payable to age 90 (5% conversion and 1% indexing) assuming a 7% per annum return and 3.0% per annum pay growth throughout the period; no tax limits applied. No C/QPP included.

Lump Sum Table (Future Dollars at age 60)

	Target Replacement Ratios		
Years to Retirement	**50%**	**70%**	**90%**
20	**$960,000**	**$1,340,000**	**$1,720,000**
30	**$1,290,000**	**$1,800,000**	**$2,320,000**
35	**$1,490,000**	**$2,090,000**	**$2,680,000**

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Self Insurance – Longevity Risk

- Longevity risk is under-appreciated
  - Lump sums to income streams reflect average mortality expectations
    - — Individually, a person has a 50% chance of outliving retirement income resources by average expectation of life
  - Actuarially, lump sum will be exhausted at average life expectancy
    - — age 84 for males age 65; age 87 for females age 65
    - — age 92 for the joint lives of a male age 65 and female spouse age 62
- Every Individual should plan for income continuation beyond the average expectation of life
- Replacement Ratio
  - Add 1% to 8% for longevity risk

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Longevity Risk

Increase in Contribution Rates for Longevity Risk (Age 90 to 100)

Replacement Ratio Table

	Contribution Rate (% of Earnings)		
Years to Retirement	5%	10%	15%
5	1% (2%)	3% (4%)	5% (6%)
10	3% (4%)	7% (8%)	10% (12%)
20	8% (10%)	17% (20%)	25% (30%)
30	15% (19%)	31% (37%)	46% (56%)
35	20% (24%)	40% (48%)	61% (73%)

(Numbers when end age was 90)

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My Point of View – What is Adequate Income?

"Three-legged" Retirement

50 - 70%

RRSP and Personal Savings	10 - 15%
Employer-Provided Pension and Retiree Benefits	40 - 45%
C/QPP and OAS	0 - 10%

"Multiple-legged" Retirement

55 - 80%

Retiree Self Insurance (e.g., Longevity risk, COLA)	0 - 5%
Retiree Benefits	0 - 5%
Retiree Investor	0 - 5%
RRSP and Personal Saving	10 - 15%
Employer-Provided Pension and *reduced* Retiree Benefits	30 - 40%
C/QPP and OAS	0 - 10%
Retiree Work Income	(0 - 15%)

Managing Employee Expectations

- “The right amount of education is ideal"
  - The "right amount" includes clear articulation and communication of the employer's philosophy and objectives for the DC plan.
  - Providing a clear indication of the potential range of income replacement ratios from the DC Plan
    - “the retirement plan will deliver a pension of x% of pre-retirement earnings for a career employee with y years of service at retirement age of z based on a target return of i&% per year...”
- Communicating DC plan features at least annually
  - Eligibility, Employer contributions, Matching contribution formulas, investment options, benefits on termination/death/retirement, expenses for investment management, switching fees and recordkeeping costs
  - An older survey (May 2004) but relevant SEI gave two examples:
    - "75% of members surveyed believed they can make contributions to their pension plan, in reality, only 51% were allowed to do so"
    - "39% of members correctly mentioned that their pension plan was compulsory, in reality 71% forced compulsory participation"
  - Use evaluation tools to measure and test member understanding of plan features

Managing Employee Expectations

- Understand your DC membership profile and ‘know your employee’
  - Gen X, Gen Y, Boomers and Traditionalists require different media from paper to technology, push versus pull communication
  - Level of sophistication varies from simple risk tolerance assessment questionnaire to complex asset allocation modelling, and stochastic (probability-based) retirement planning tools.
  - “One size will not fit all”
- Educate DC members on settlement options at retirement
  - Most DC plan sponsor and their advisers focus on pre-retirement (accumulation) phase; education and counseling must be provide for the post-retirement (distribution) phase.
  - Plan sponsors should provide on-line self service tools for members to review and determine their settlement options.
    - More sophisticated interactive tools with stochastic simulation capabilities will clearly illustrate the likelihood (probability) of having adequate retirement resources and/or outliving one’s retirement resources

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"Bullet Proofing" Retirement Adequacy Risk

- The threat of litigation under DC plans can be reduced by offering member education at three levels:
  - effective *education* on the DC plan
  - structured *counseling* on retirement planning
    - tailored sessions and well-designed communication
  - third-party investment and financial planning *advice*
- DC plan sponsors must understand the difference between education, counseling and advice
  - Education: facilitates understanding and increases knowledge of DC plans among DC members
  - Counseling guides a DC member to appropriate solutions but falls short of *advice*
  - Advice recommends or advocates a single framework/solution to a DC member

Are you a candidate for DC litigation?

Score – Tick all applicable statements (responses are not equally weighted)

- Do you clearly articulate your primary pension purpose?
  - __ "...provides periodic payments after retirement to members and beneficiaries until death…"
  - __ "...provides a retirement pension of x% of earnings for a career employee with years of service at retirement age of z based on a target return of i&% per year..."
- Are your communication messages consistent and uniform?
  - __ The communication consistently elaborates the employer retirement commitment
  - __ The communication educates employee on their retirement responsibility
- Are you delivering on your retirement commitment?
  - __ Statement shows account balance and investment returns to date
  - __ Statement compares target versus actual to date and projections
- What type of communication and education material do you distribute?
  - __ General information on financial planning, description of investment options and retirement sessions
  - __ Customized and personalized with applicable and relevant information

Are you a candidate for DC litigation?

Score – Tick all applicable statements (responses are not equally weighted)

- Do your employees have access to self service retirement tools?

  __ Employees have access to generic retirement information on the intranet

  __ Employees have access to generic on-line retirement modelling tools

  __ Employees have access to customized and personalized retirement tools

- Have you requested, reviewed and acted upon reports on your DC Plan?

  __ You request standard reports
  __ You request customized non-standard reports

- Do you “know your employees” well ?
  __ You have one set of communication materials for all employees
  __ You have different communication material for varying demographic profiles

Are you a candidate for DC litigation?

Score – Tick all applicable statements (responses are not equally weighted)

- Have you hired qualified financial planning advisors?

  __ Advisors provide generic education information and seminars

  __ Advisors customize education material to line up with company's communication strategy

  __ Advisors clearly articulate your retirement plan's primary purpose in all communications

- Do you have a well-documented retirement communication and education strategy and implementation plan?

  __ The document is reviewed in accordance with governance protocol and updated annually

  __ The document has had legal review and approved

  __ The implementation plan is acted upon and gaps are noted and acted upon

Are you a candidate for DC litigation?

Scores	Comments
35 - 50	**You are unlikely candidate ! Keep up the good work!**
20 - 34	**You need to work out a few issues to avoid the litigation trap. Start today!**
Less than 20	**You have issues that need immediate attention. Plan to hire a good litigator!**

Recap - "Bullet Proofing" Retirement Adequacy Risk

- Develop a well-documented Communication and Education strategy and implementation plan
  - Include clear content on: purpose of plan, responsibility, monitoring, communication approaches, measurement and effectiveness
  - Execute the implementation plan
    - Document and record all implemented actions
    - If external vendors are used, ensure that approach is consistent with implementation plan
- Communication material
  - Simple, concise and understandable
  - Consistent documentation and messaging
  - Explain what the plan delivers
  - Educate employees on DC plan provisions and investment options
  - Distribute meaningful quarterly or annual statements
  - Ensure employees are aware of disclaimers and waivers
  - Track employees attendance at sessions and ensure follow-up
  - Measure effectiveness

Questions

"I hear and forget.
I see and remember.
I do and I understand. "
Confucius
(551 BC – 479 BC)

"Knowing is not enough; we must apply.
Willing is not enough; we must do."
Johann von Goethe
(28 August 1749 – 22 March 1832)