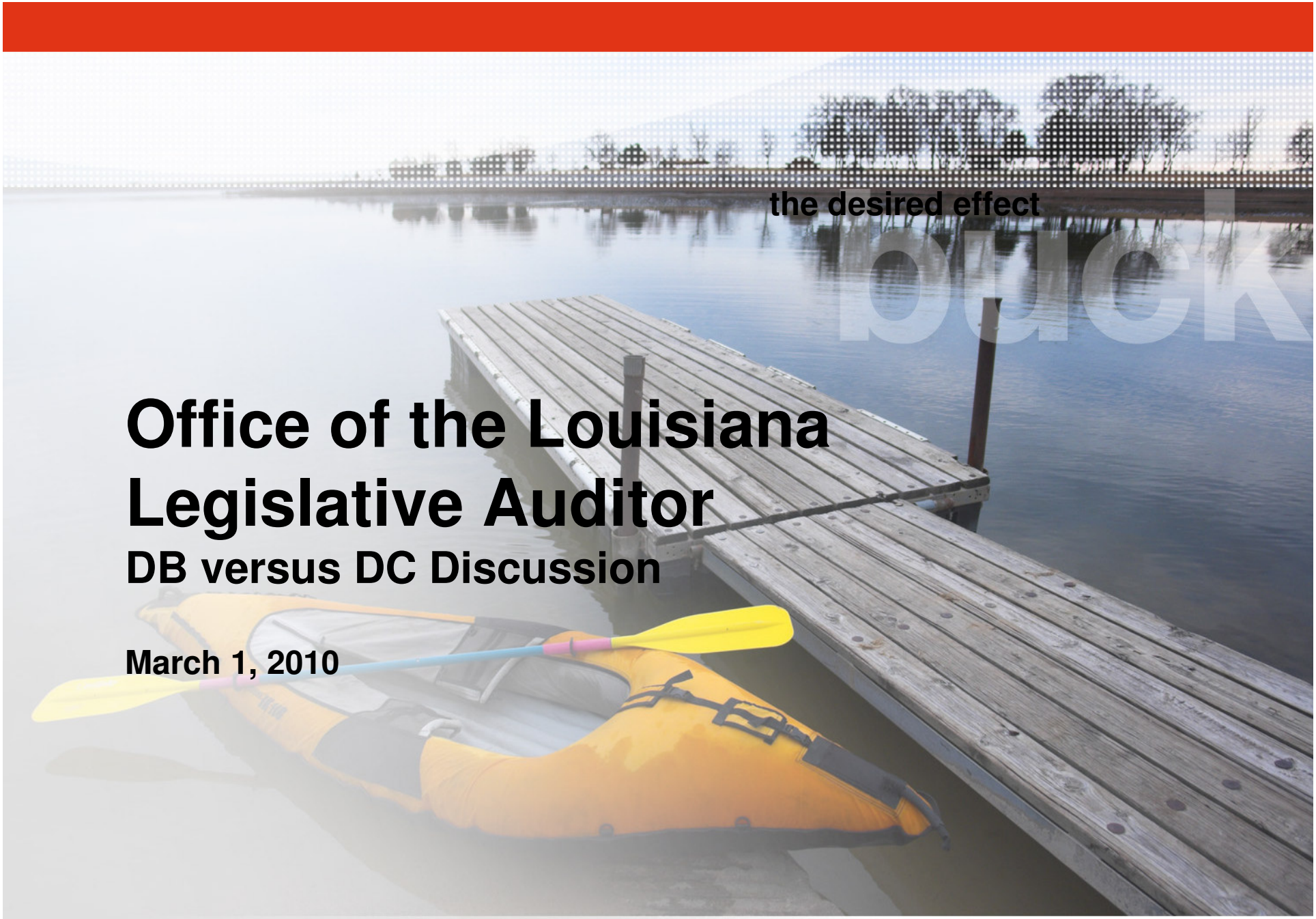

Office of the Louisiana Legislative Auditor

DB versus DC Discussion

March 1, 2010

A Xerox Company

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Overview of State Retirement Systems

- Louisiana sponsors four retirement systems that provide pension benefits for 160,000 active employees.
- These defined benefit plans provide monthly pension benefits that are based on:
  - Average pay during the final years of employment, and
  - Years of service
- The plans are funded by a combination of employee contributions and actuarially determined contributions by the state.

Overview of State Retirement Systems

	Active Count	Total Salary	Average Salary	Average Age	Average Service	Accrued Liability	Normal Cost	Current Benefit Formula
Louisiana State Employees' Retirement System (LASERS)								
* **Regular**	**53,637**	**$ 2,149**	**$ 40,067**	**44.1**	**10.6**	**$ 4,563**	**$ 312.7**	**2.50% x FAE5 x service**
Corrections	5,216	204	39,138	40.7	8.6	428	36.0	3.33% x FAE3 x service
Wildlife	223	12	52,521	36.7	10.0	37	3.0	3.33% x FAE3 x service
Judges	333	39	117,968	54.0	12.0	131	10.5	3.50% x FAE3 x service
Legislators	18	1	49,593	54.6	14.5	4	0.3	3.50% x FAE3 x service
Peace Officers	114	5	45,718	43.7	12.9	15	0.9	3.33% x FAE3 x service
ATC	48	2	42,731	36.0	7.9	4	0.3	3.33% x FAE3 x service
Total LASERS	59,589	$ 2,412	$ 40,484	43.8	10.4	$ 5,182	$ 363.7	
Teachers' Retirement System of Louisiana (TRSL)								
* **Regular**	**76,566**	**$ 3,302**	**$ 43,128**	**43.6**	**10.4**	**$ 6,091**	**$ 442.4**	**2.50% x FAE3 x service**
LSU/University	6,750	402	59,527	45.2	9.0	738	54.2	2.50% x FAE3 x service
Lunch A	144	4	24,835	56.1	26.8	21	0.8	3.00% x FAE3 x service
Lunch B	1,259	24	19,273	50.0	10.1	34	2.8	2.00% x FAE3 x service
Total TRSL	84,719	$ 3,732	$ 44,049	43.8	10.3	$ 6,884	$ 500.2	
State Police Retirement System (STPOL)								
* **STPOL**	**1,175**	**$ 59**	**$ 50,685**	**38.2**	**10.1**	**$ 678**	**$ 15.1**	**3.33% x FAE3 x service**
Louisiana School Employees' Retirement System (LSERS)								
* **LSERS**	**12,589**	**$ 292**	**$ 23,170**	**49.1**	**9.3**	**$ 810**	**$ 57.1**	**3.33% x FAE5 x service**
Total for all Retirement Systems to be included in Project								
TOTAL	**158,072**	**$ 6,495**	**$ 41,092**	**43.9**	**10.2**	**$ 13,554**	**$ 936.1**	

Note: Total salary, accrued liability and normal cost amounts are in $millions. Excludes DROP.

*** Indicates employee groups that will be included in our retirement plan analysis.**

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Our Charge

Question:

- What are the financial, benefit and risk management implications of implementing a defined contribution (DC) plan structure for employees hired by the state after July 1, 2010 ?

Concerns and Considerations

Benefits and cost associated with a new DC plan structure

- What should the annual contribution rate be?
- ***How should annual contributions be allocated between employees and state agencies?***
- What is the retirement benefit target for the DC plan?
- How do benefits under the new DC plans compare with benefits provided under the legacy DB plans?
- How will investment volatility affect benefits provided under the new DC plans?
- ***To what extent will constitutional guarantees influence the design of the DC plans?***
- How will ancillary benefits, such as disability and survivor benefits, be accommodated under the DC plans?

Please note that responses to questions highlighted above will be addressed in the second phase of this project.

Concerns and Considerations

Normal cost issues for the legacy DB plans

- Project normal costs for the legacy DB plans under the following conditions:
  - Status quo
  - Change funding method from Projected Unit Credit (PUC) to Entry Age Normal (EAN)
  - Decrease interest assumption from 8.25% to 7.00%
- Project normal costs for 20 years into the future
  - As dollars
  - As a percentage of legacy pay

Please note that these questions will be addressed in the second phase of this project.

Concerns and Considerations

Unfunded accrued liability (UAL) cost issues for the legacy DB plans

- Determine UAL and payment schedule under the following conditions:
  - Status quo
  - Change funding method from PUC to EAN
  - Decrease interest assumption from 8.25% to 7.00%
- Project UAL costs for 20 years into the future
  - As dollars
  - As percentage of legacy pay
  - As percentage of total pay

Please note that these questions will be addressed in the second phase of this project.

Concerns and Considerations

Risk-management strategies for legacy DB plans

- Uncouple COLAs from investment returns
- Change funding methods from PUC to EAN

Please note that these questions will be addressed in the second phase of this project.

LASERS Regular Employees

Current Plan

Plan formula: monthly benefit equal to 2.50% of the average salary during the last five years multiplied by service

Example:

Average of highest five consecutive years of salary in last 10 years of employment = $33,000

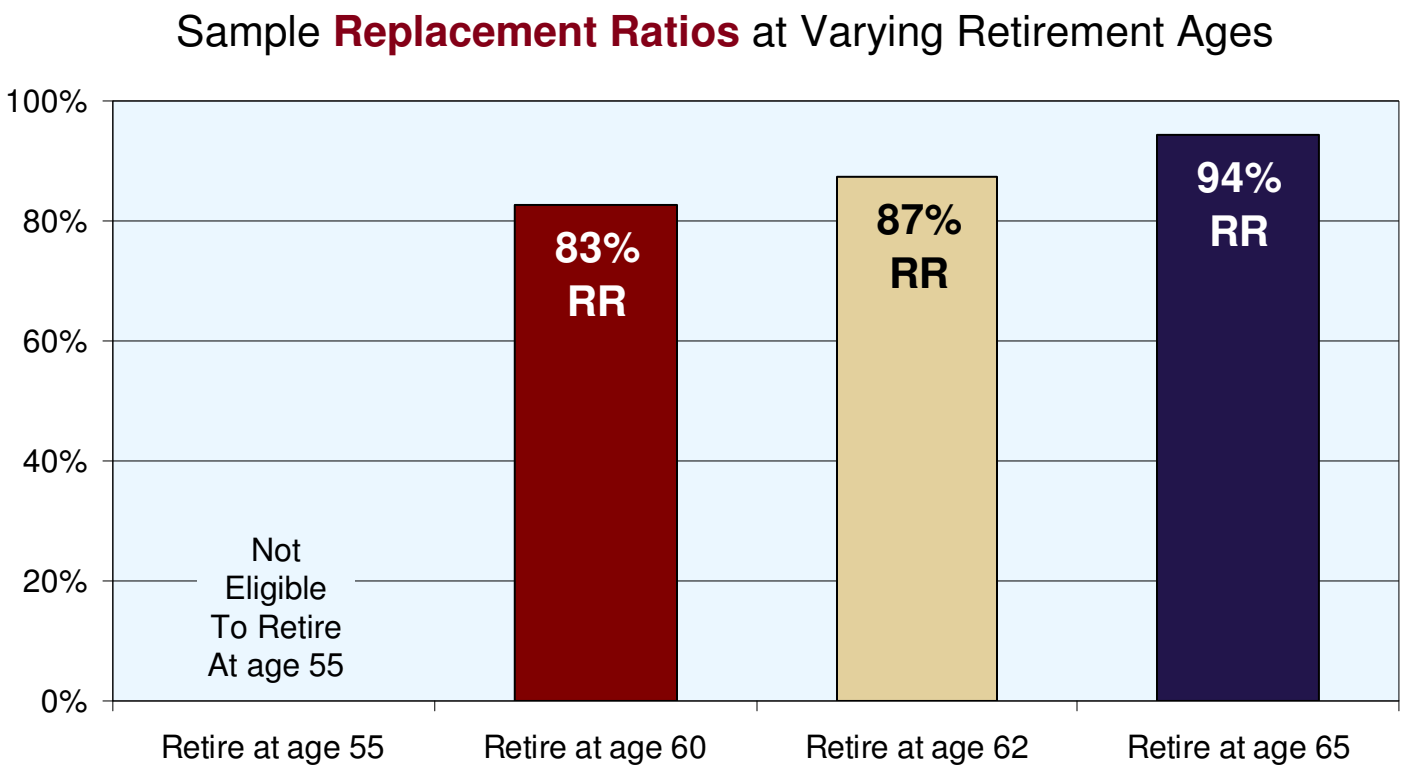
Annual benefit = 2.50% x $33,000 x 40 years of service = $33,000

Replacement income ratio (RR): Portion of salary in the year before retirement that is "replaced" by the retirement benefit.

Salary in last year of employment = $35,000

RR = $33,000 ÷ $35,000 = 94%

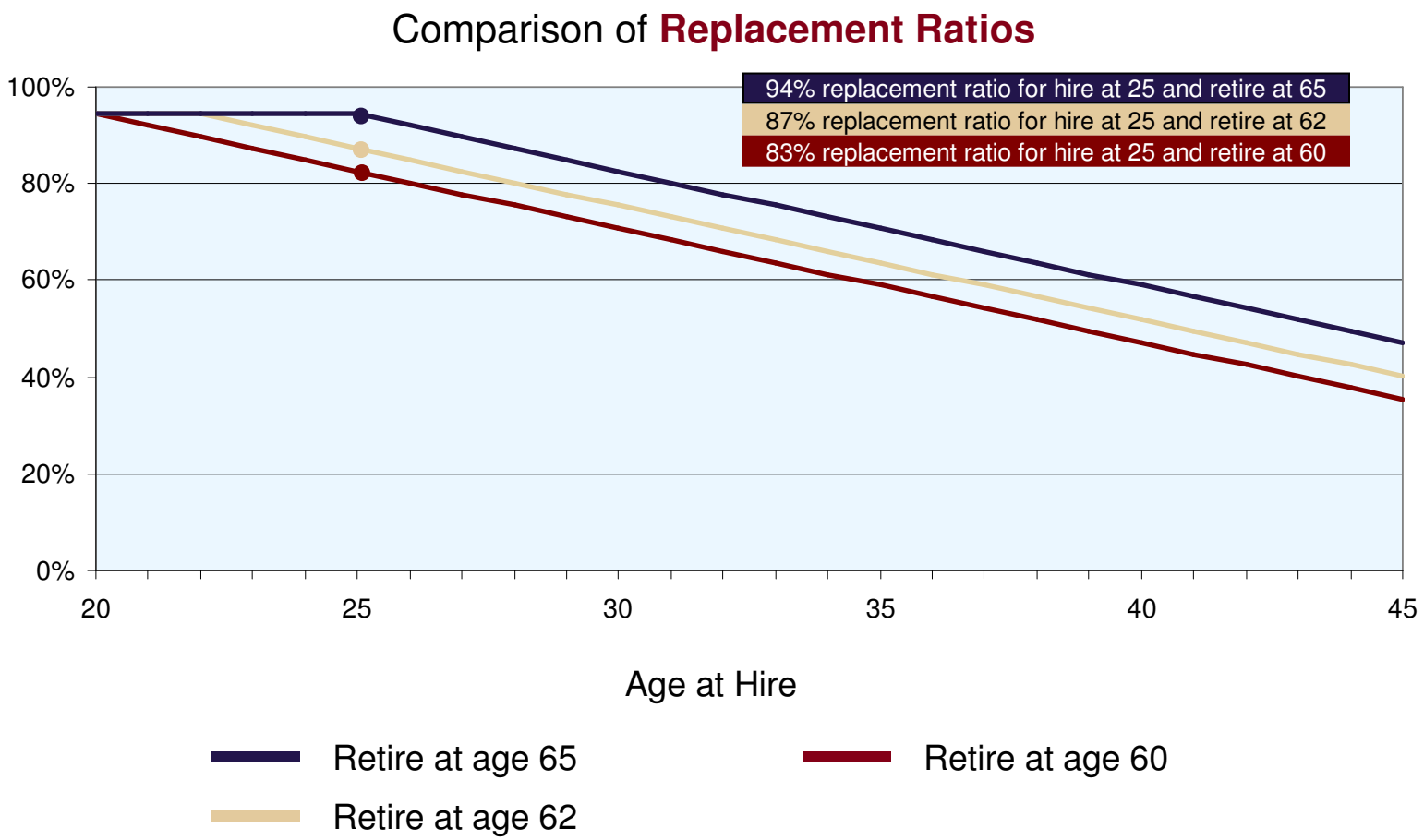
Current Plan - Replacement Ratio Analysis



Comments

- Based on sample employee hired at age 25
- Replacement income is independent of salary level

Current Plan - Replacement Ratio Analysis



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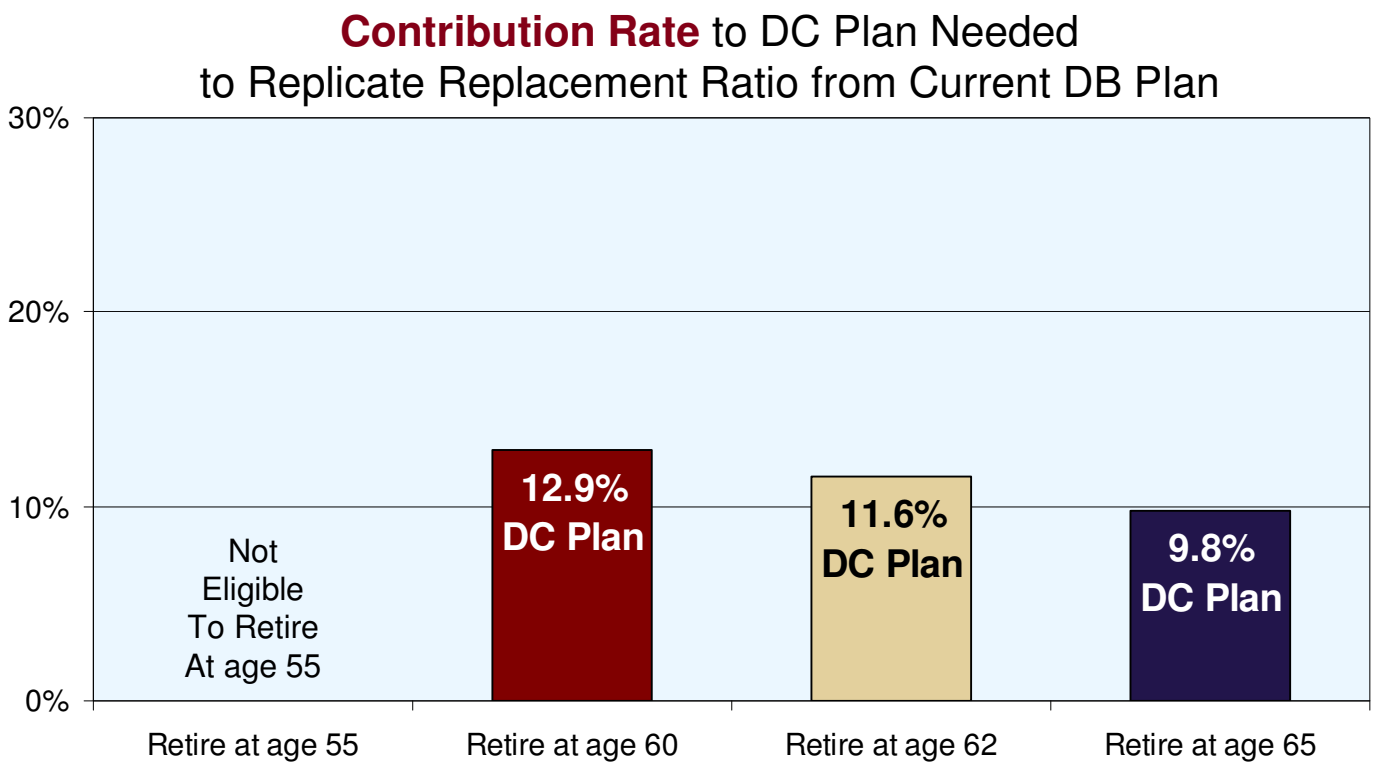
DC Plan Alternative – Annual Contribution Rate

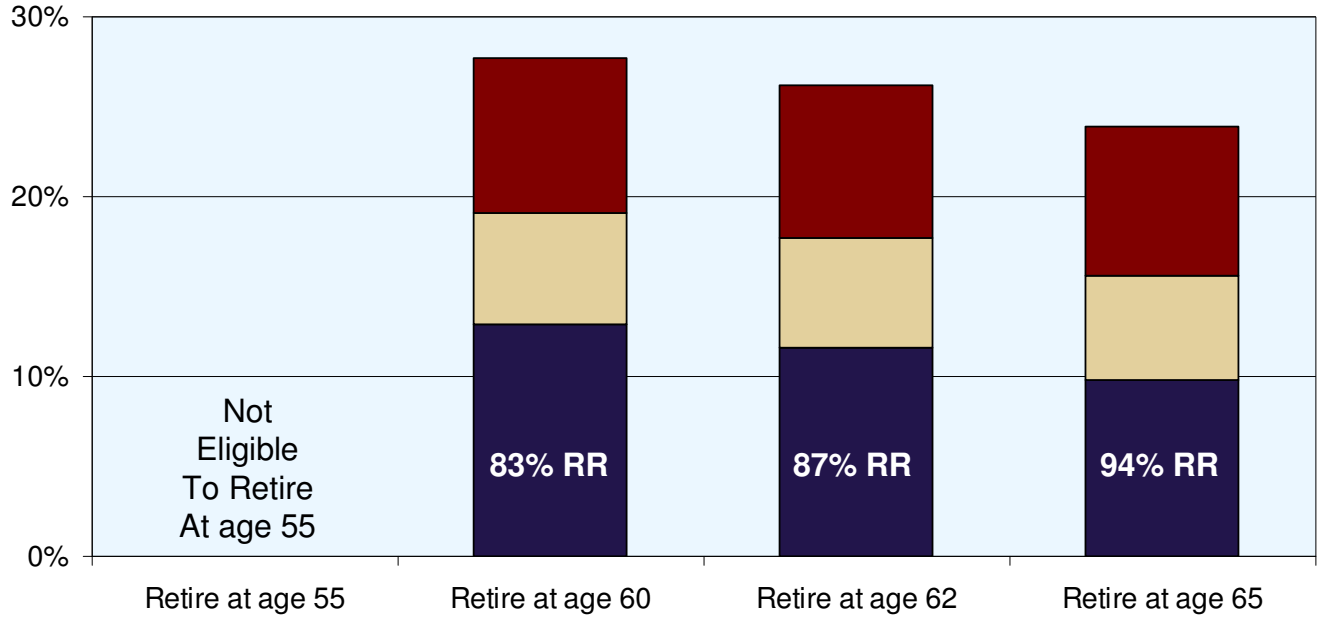


Comments

- Based on sample employee hired at age 25
- Assumes return on investments of 8.00% each year

DC Plan Alternative – Annual Contribution Rate

Contribution Rate to DC Plan Needed
to Replicate Replacement Ratio from Current DB Plan



Contribution rate required if investment return is 8% per year

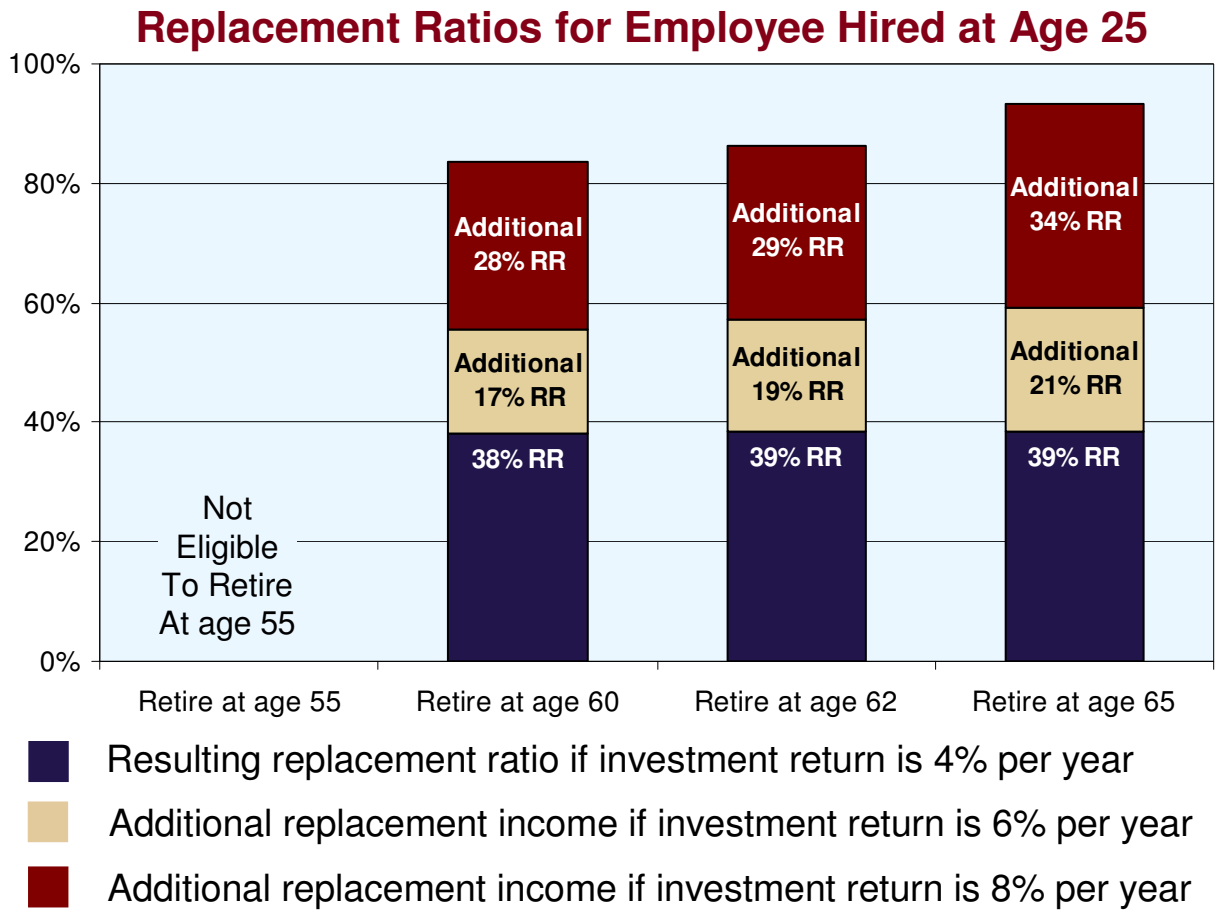
Additional contribution required if return is 6% per year (about 6.00% more each year)

Additional contribution required if return is 4% per year (about 8.50% more each year)

Comments

- Based on sample employee hired at age 25

DC Plan Alternative – Replacement Ratio Analysis



Note: DC contribution rates are 12.9%, 11.6% and 9.8% when retiring at ages 60, 62 and 65, respectively.

Current Plan – Replacement Ratio Analysis

Replacement Ratios for Current DB Plan Structure

Age at Hire	Age at Retirement			
	55	60	62	65
20	N/A	94%	94%	94%
25	N/A	83%	87%	94%
30	N/A	71%	75%	83%
35	N/A	59%	64%	71%
40	N/A	47%	52%	59%
45	N/A	35%	40%	47%

Comments

- Replacement income under current DB plan structure varies widely depending on age at retirement and years worked
- Recommended DC contribution percentage will be uniform regardless of age at retirement
- Select employee profile of age 25 at hire and retiring at age 60 as basis for setting DC contribution rate

DC Plan Alternative – Replacement Ratio Analysis

Replacement Ratios for 13.00% DC Plan Structure

Age at Hire	Age at Retirement			
	55	60	62	65
20	76%	111%	130%	165%
25	56%	83%	98%	125%
30	40%	62%	73%	94%
35	28%	45%	53%	70%
40	18%	31%	38%	50%
45	11%	20%	25%	35%

Comments

- An annual DC contribution of 13.00% of salary "replicates" the replacement ratio under the DB plan for a participant that is hired at age 25 and retires at age 60
- Assumes that annual investment return is 8.00%

DC Plan Alternative – Alternate Investment Returns

8.00% Investment Returns Per Year

Age at Hire	Age at Retirement			
	55	60	62	65
20	76%	111%	130%	165%
25	56%	83%	98%	125%
30	40%	62%	73%	94%
35	28%	45%	53%	70%
40	18%	31%	38%	50%
45	11%	20%	25%	35%

4.00% Investment Returns Per Year

Age at Hire	Age at Retirement			
	55	60	62	65
20	35%	45%	50%	59%
25	29%	39%	43%	51%
30	24%	32%	36%	44%
35	19%	26%	30%	37%
40	14%	21%	24%	30%
45	9%	15%	18%	23%

Replacement Ratios for a 13.00% DC Plan

6.00% Investment Returns Per Year

Age at Hire	Age at Retirement			
	55	60	62	65
20	51%	70%	79%	97%
25	40%	56%	64%	79%
30	31%	44%	51%	63%
35	23%	34%	40%	50%
40	16%	25%	30%	38%
45	10%	17%	21%	28%

Note: Color coding indicates change in Replacement Ratio from current plan to DC alternative:

- Green indicates “winner” / increase in benefit
- Red indicates “loser” / decrease in benefit

Alternate DC Levels – Alternate Contribution Levels

Alternate DC Plan 15% Contribution Level

Age at Hire	Age at Retirement			
	55	60	62	65
20	59%	80%	92%	111%
25	46%	65%	74%	91%
30	36%	51%	59%	73%
35	26%	39%	46%	58%
40	18%	29%	34%	44%
45	11%	20%	25%	33%

Alternate DC Plan 11% Contribution Level

Age at Hire	Age at Retirement			
	55	60	62	65
20	43%	59%	67%	82%
25	34%	47%	54%	67%
30	26%	37%	43%	54%
35	19%	29%	34%	42%
40	13%	21%	25%	32%
45	8%	15%	18%	24%

Replacement Ratios Assume 6.00% Return on Investments Each Year

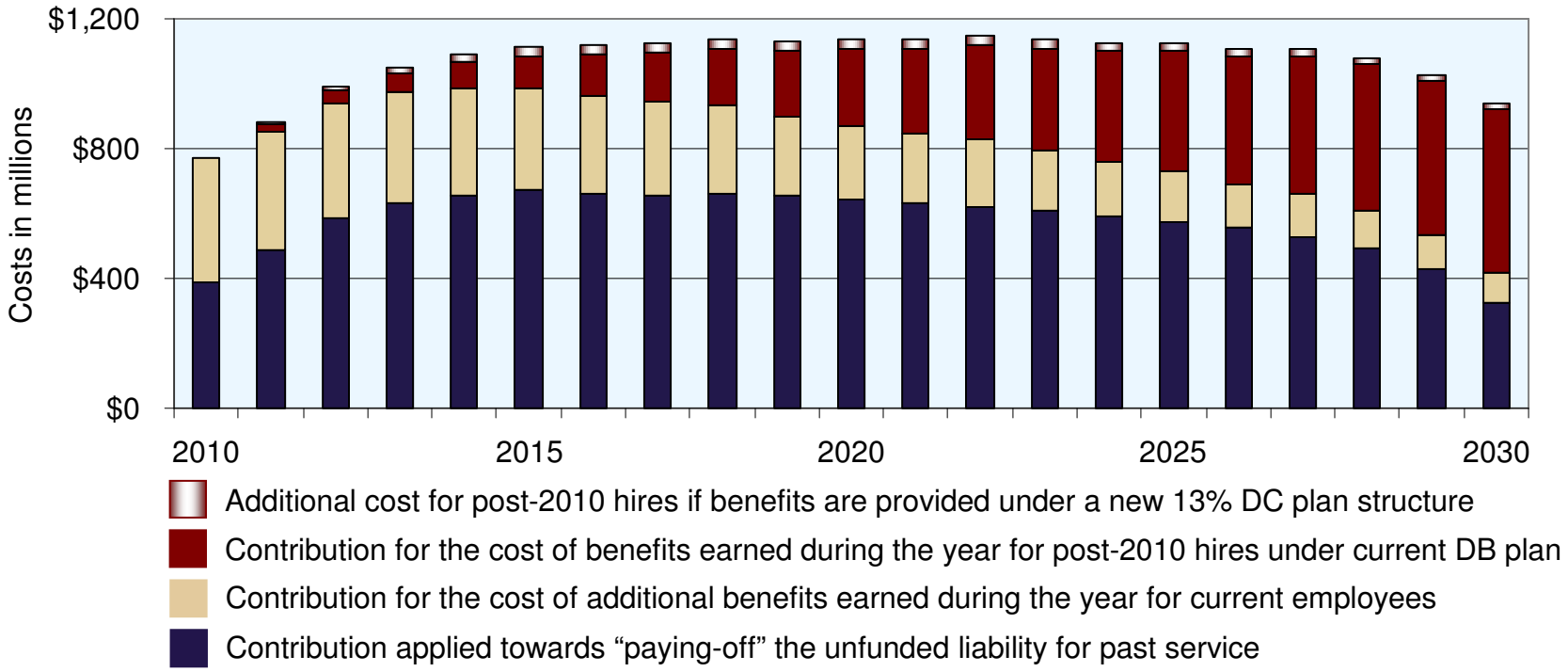
Alternate DC Plan 13% Contribution Level

Age at Hire	Age at Retirement			
	55	60	62	65
20	51%	70%	79%	97%
25	40%	56%	64%	79%
30	31%	44%	51%	63%
35	23%	34%	40%	50%
40	16%	25%	30%	38%
45	10%	17%	21%	28%

Note: Color coding indicates change in Replacement Ratio from current plan to DC alternative:

- Green indicates “winner” / increase in benefit
- Red indicates “loser” / decrease in benefit

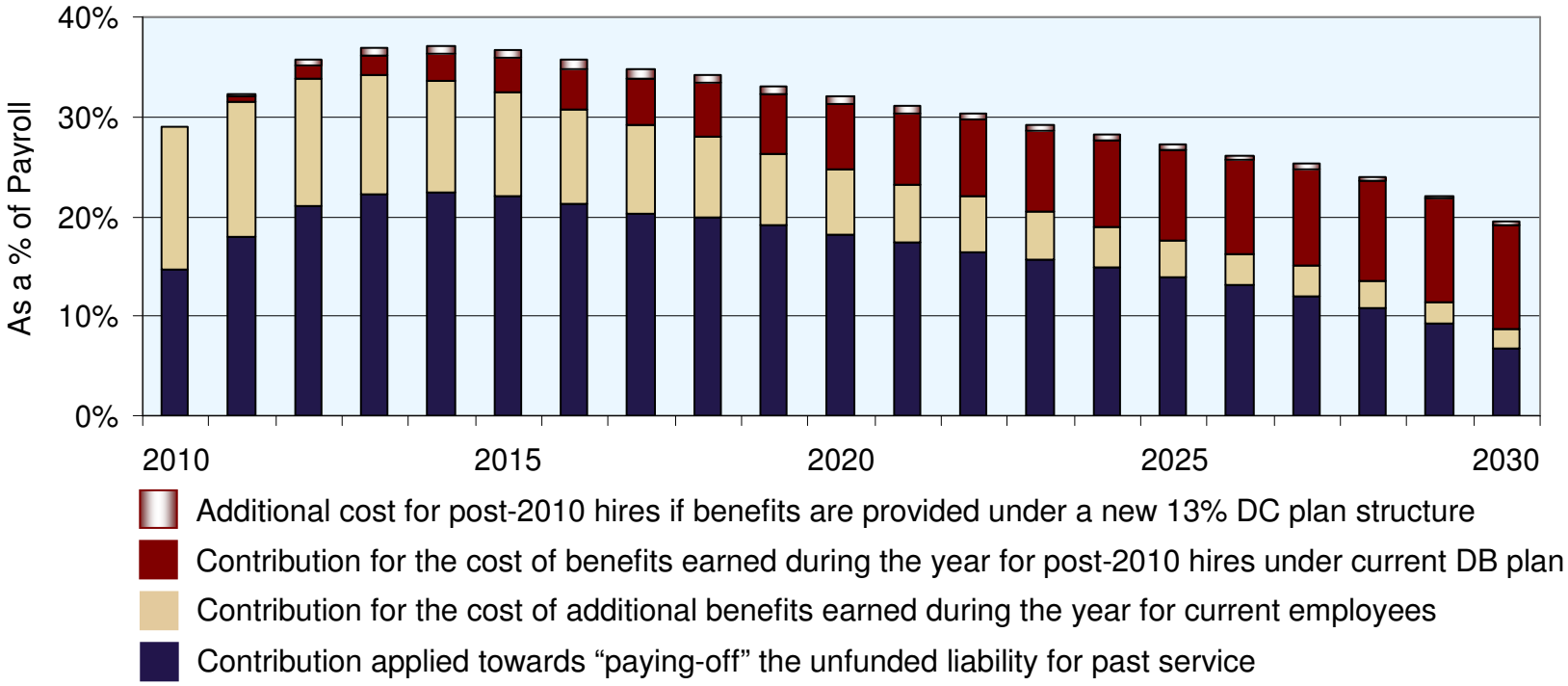
Projected Contribution Requirements for Pension



Comments

- Based on a valuation interest rate of 8.25%
- Assumes return on DB plan investments of 8.25% each year
- Annual amounts shown represent both employer and employee contributions
- Contributions are made each year equal to the minimum required amount

Projected Contribution Requirements for Pension



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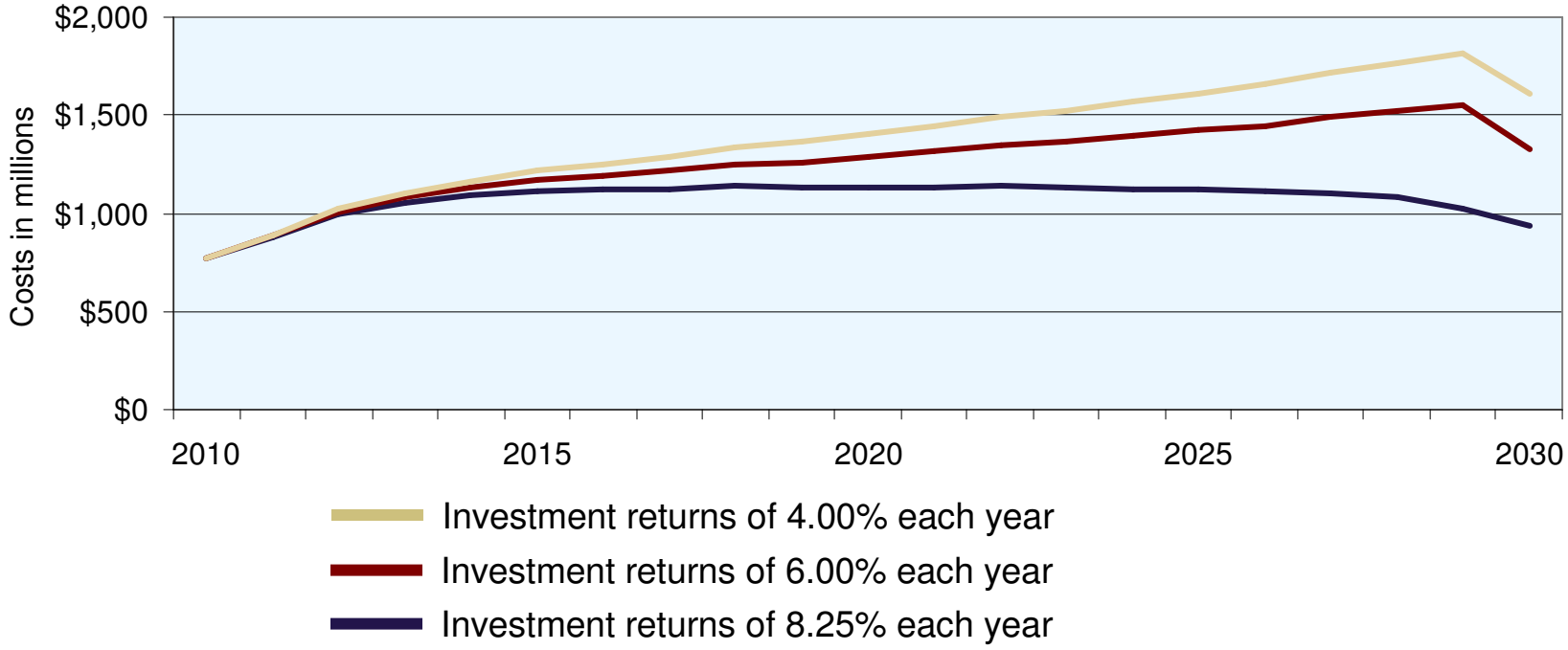
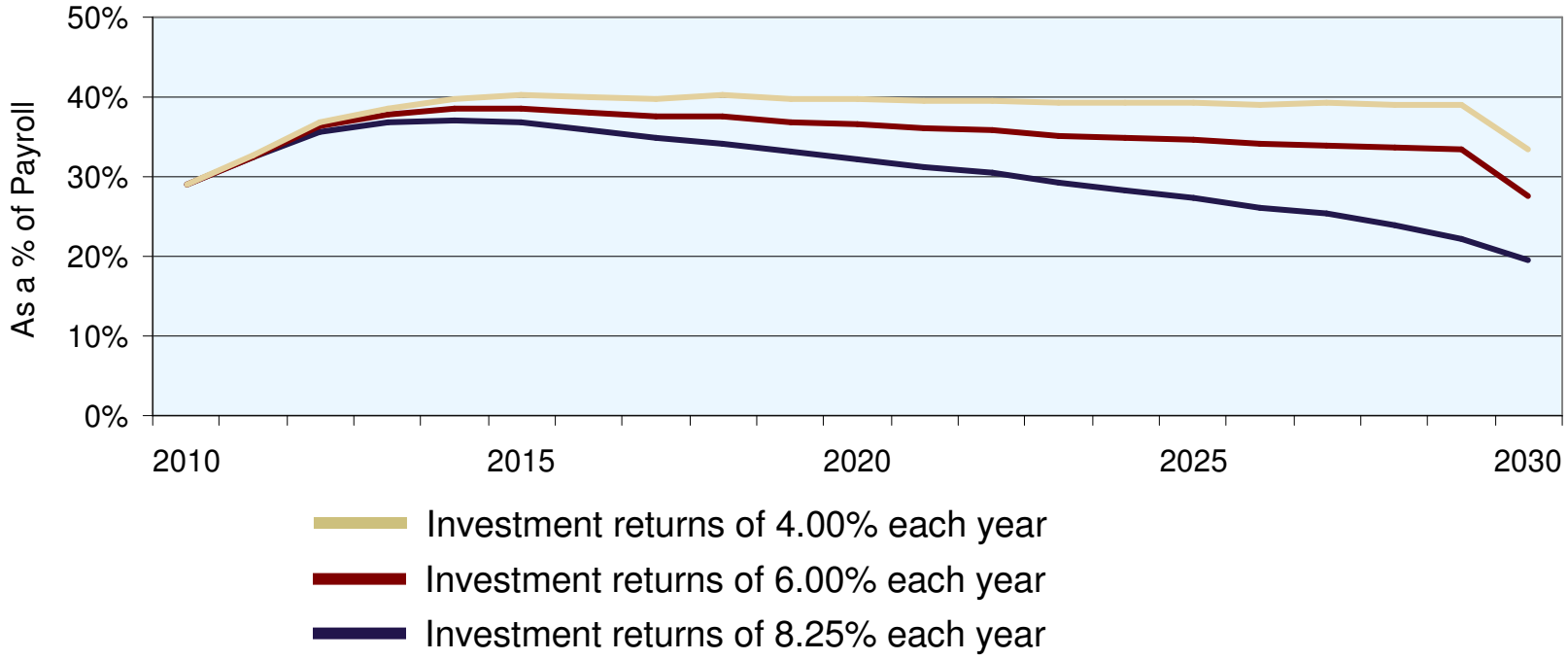
Projected Contribution Requirements for Pension



Comments

- Lines represent total costs of retirement program with 13.00% DC plan for post-2010 hires
- Based on a valuation interest rate of 8.25%
- Assumes return on DB plan investments as shown of 8.25%, 6.00% or 4.00%
- Annual amounts shown represent both employer and employee contributions
- Contributions are made each year equal to the minimum required amount

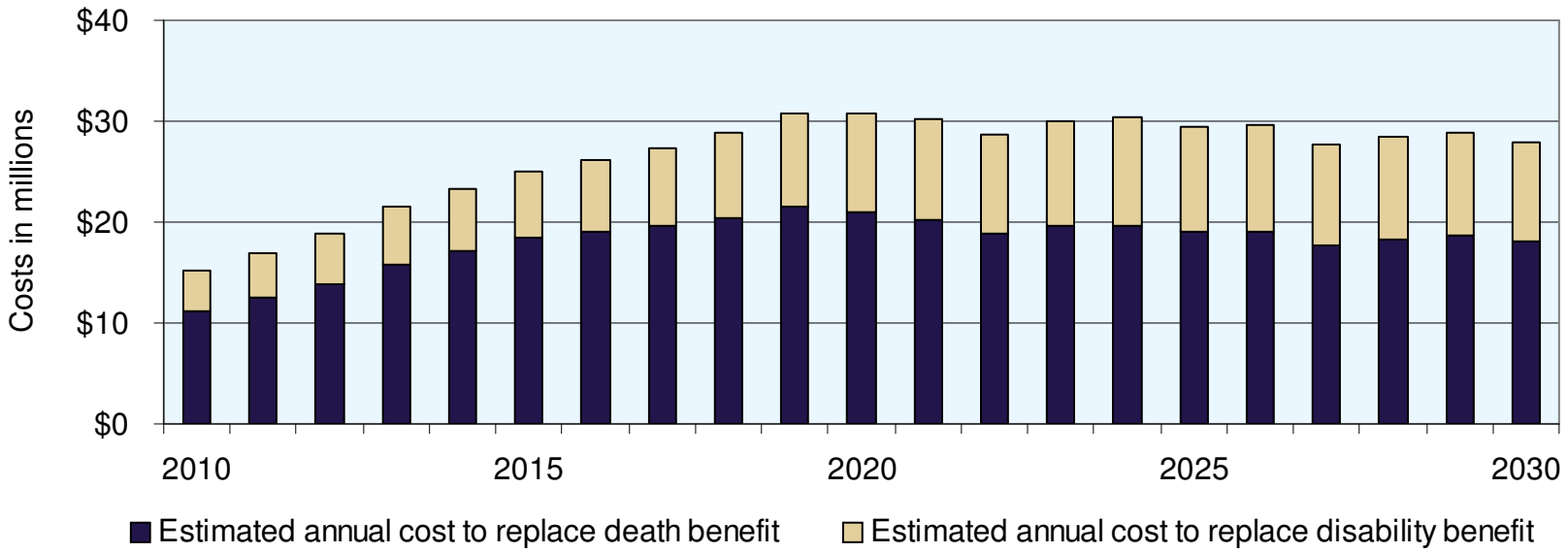
Projected Contribution Requirements for Pension



Comments

- Lines represent total costs of retirement program with 13.00% DC plan for post-2010 hires
- Based on a valuation interest rate of 8.25%
- Assumes return on DB plan investments as shown of 8.25%, 6.00% or 4.00%
- Annual amounts shown represent both employer and employee contributions
- Contributions are made each year equal to the minimum required amount

Projected Cost of Replacing Ancillary Benefits



Comments

- Cost of disability and in-service death coverage for post-2010 hires would rise rapidly over the years following implementation of DC coverage
- The value of these benefits would reach $556 million by 2030
- If funded through group insurance (which would eliminate risks for the state), the cost would be greater

Observations and Conclusions

- DC plan for post-2010 hires with contributions of 13.00% of pay would not cost significantly more than the current DB plan
- But some big losers and some big winners – benefits are distributed in entirely different manner
- Projected annual contribution requirements for unfunded liability
  - Assuming 8.25% asset returns, amortization payments range from high of $670 million (22% of payroll) to low of $325 million (7% of payroll) at end of the projection period
  - Amortization payments increase substantially if actual asset returns are lower
    - Assuming 6.00% returns, payments are as high as $1.0 billion a year
    - Assuming 4.00% returns, payments are as high as $1.2 billion a year
- Projected annual costs for benefits earned each year (normal costs)
  - Annual costs for existing employees decline from about $380 million (14% of payroll) currently to $100 million (2% of payroll) at end of projection period
  - Cost to provide benefits for post-2010 hires by the year 2030
    - Projected to exceed $500 million a year
    - As much as $30 million higher a year to provide through DC plan

Observations and Conclusions

- By the year 2030, over 45% of contributions to the retirement program are expected to be going into the DC plan
- Any COLAs would need to be provided outside of the retirement plan
- Cost of disability and in-service death coverage for post-2010 hires would rise rapidly over the years following implementation of DC coverage
  - The value of these benefits would reach $556 million by 2030
  - If funded through group insurance (which would eliminate risks for the state), the cost would be greater
- Significant underlying assumptions (which may or may not hold):
  - Ability of DC plan participants to achieve an 8% return on their funds
    - Historically, DC plan funds have earned lower returns than those held in DB plans.
    - Particularly difficult to attain such returns in the early years of the DC plan, when trust will be small
  - Ability of legacy DB plan to continue to achieve current assumed investment returns as it matures

Data, Assumptions, Methods and Plan Provisions

- Interest discount rate of 8.25% for all years
- Census data as of June 30, 2009
- Plan liabilities are determined using the projected unit credit funding method
- Unless otherwise noted, asset returns are equal to 8.25% per year net of administrative expenses
  - Expenses for investment advisors equal to .45% of assets
  - All other expenses increase by 2.00% per year
- 20% of investment returns are attributed to realized gains/losses
- Asset returns on an AVA basis in excess of 8.25%:
  - First $50 million reduce the OAB and next $50 million reduce the EAAB
  - Provide retiree COLAs (50% of the amount in excess of $100m)

Data, Assumptions, Methods and Plan Provisions

- Contributions to the plan are made by only the employer and employees
- IUALAF assumed to be exhausted as of June 30, 2010 to reduce the OAB and EAAB per Act 497
  - The IUALAF and ECA will not be used in future years to reduce funding requirements
- All other assumptions, actuarial methods and plan provisions are as outlined in the 2009 valuation reports

Key definitions:

IUALAF - Initial Unfunded Accrued Liability Amortization Fund

OAB - Original Amortization Base

EAAB - Experience Account Amortization Base

ECA - Employer Credit Account

Teachers' Retirement System of Louisiana

Current Plan

Plan formula: monthly benefit equal to 2.50% of the average salary during the last three years multiplied by service

Example:

Average of highest three consecutive years of salary in last 10 years of employment = $34,000

Annual benefit = 2.50% x $34,000 x 35 years of service = $29,750

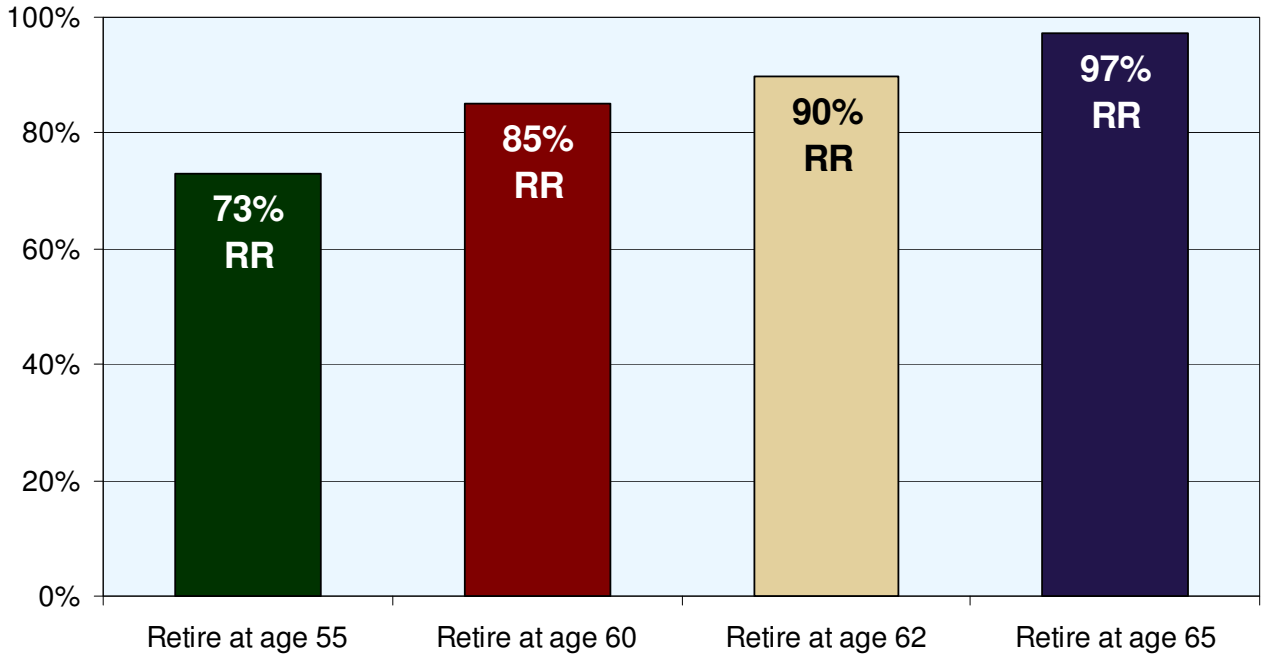
Replacement income ratio (RR): Portion of salary in the year before retirement that is "replaced" by the retirement benefit.

Salary in last year of employment = $35,000

RR = $29,750 ÷ $35,000 = 85%

Current Plan - Replacement Ratio Analysis

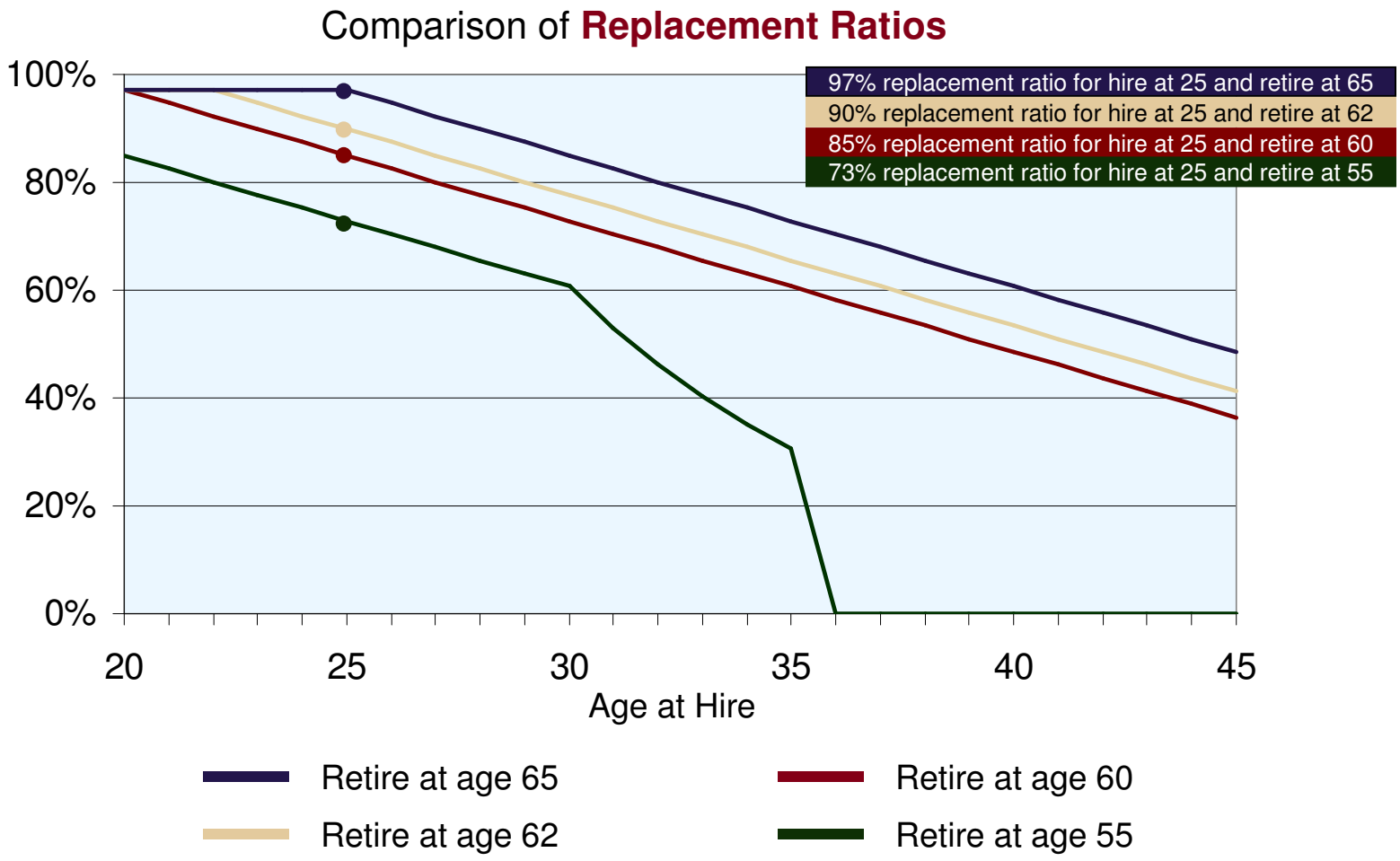
Sample **Replacement Ratios** at Varying Retirement Ages



Comments

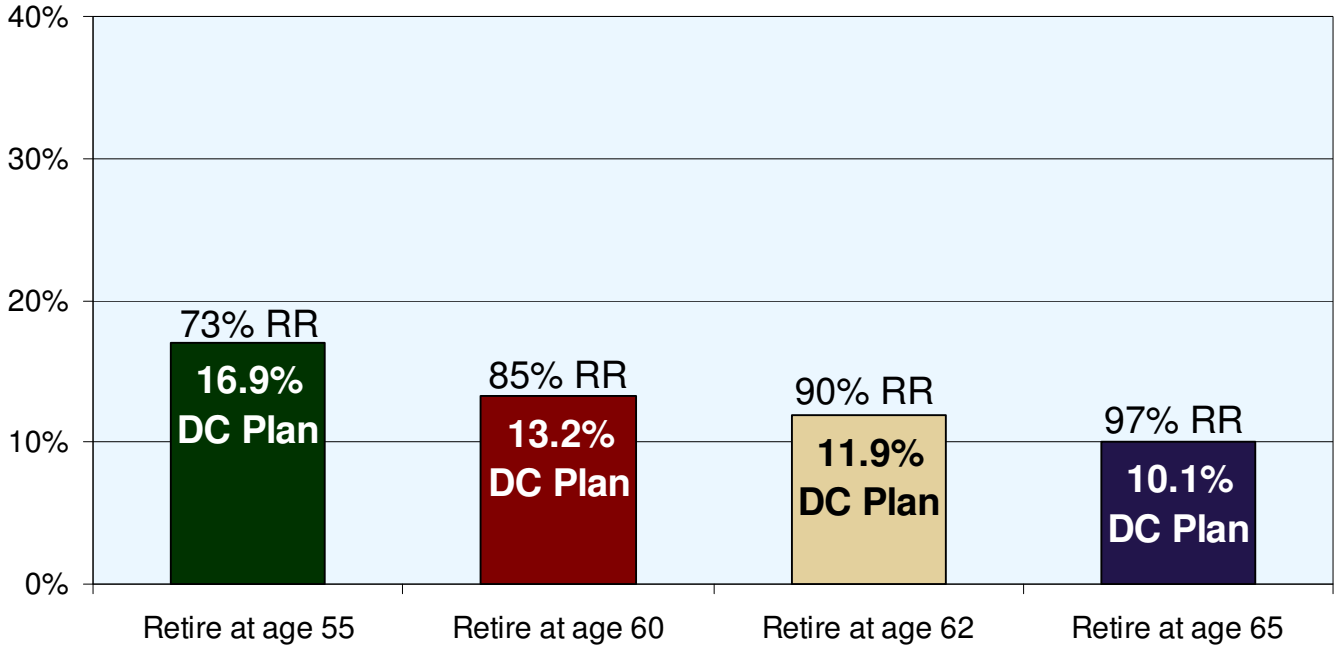
- Based on sample employee hired at age 25
- Replacement income is independent of salary level

Current Plan - Replacement Ratio Analysis



DC Plan Alternative – Annual Contribution Rate

Contribution Rate to DC Plan Needed
to Replicate Replacement Ratio from Current DB Plan

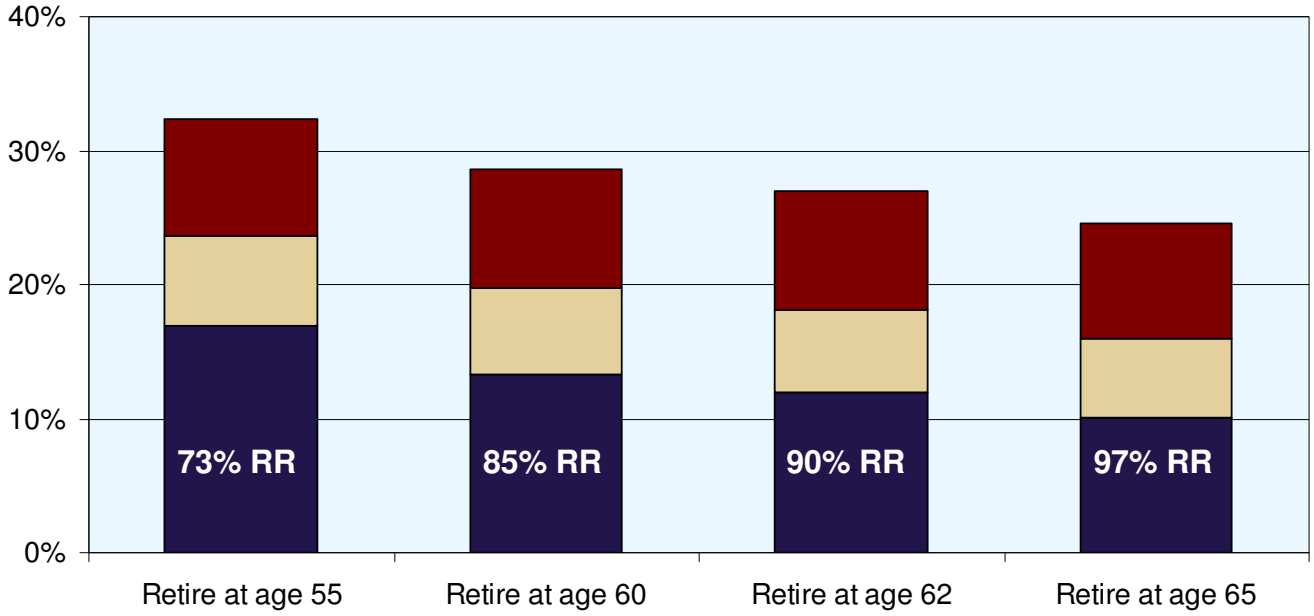


Comments

- Based on sample employee hired at age 25
- Assumes return on investments of 8.00% each year

DC Plan Alternative – Annual Contribution Rate

Contribution Rate to DC Plan Needed
to Replicate Replacement Ratio from Current DB Plan



Contribution rate required if investment return is 8% per year

Additional contribution required if return is 6% per year (about 6.50% more each year)

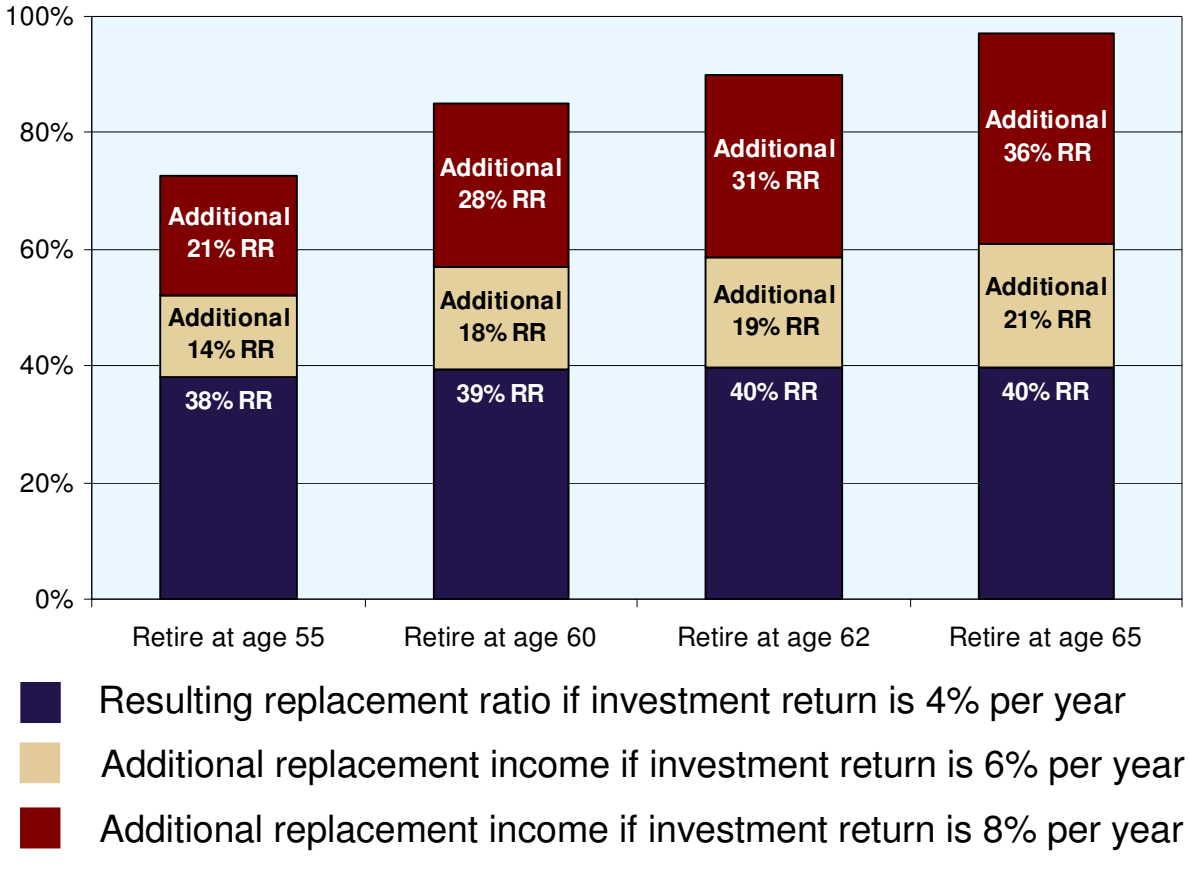
Additional contribution required if return is 4% per year (about 8.75% more each year)

Comments

- Based on sample employee hired at age 25

DC Plan Alternative – Replacement Ratio Analysis

Replacement Ratios for Employee Hired at Age 25



Note: DC contribution rates are 16.9%, 13.2%, 11.9% and 10.1% when retiring at ages 55, 60, 62 and 65, respectively.

Current Plan – Replacement Ratio Analysis

Replacement Ratios for Current DB Plan Structure

Age at Hire	Age at Retirement			
	55	60	62	65
20	85%	97%	97%	97%
25	73%	85%	90%	97%
30	61%	73%	78%	85%
35	31%	61%	66%	73%
40	N/A	49%	53%	61%
45	N/A	36%	41%	49%

Comments

- Replacement income under current DB plan structure varies widely depending on age at retirement and years worked
- Recommended DC contribution percentage will be uniform regardless of age at retirement
- Select employee profile of age 25 at hire and retiring at age 60 as basis for setting DC contribution rate

DC Plan Alternative – Replacement Ratio Analysis

Replacement Ratios for 13.25% DC Plan Structure

Age at Hire	Age at Retirement			
	55	60	62	65
20	77%	113%	132%	168%
25	57%	85%	100%	128%
30	41%	63%	74%	96%
35	29%	45%	54%	71%
40	19%	32%	38%	51%
45	11%	21%	26%	36%

Comments

- An annual DC contribution of 13.25% of salary "replicates" the replacement ratio under the DB plan for a participant that is hired at age 25 and retires at age 60
- Assumes that annual investment return is 8.00%

DC Plan Alternative – Alternate Investment Returns

8.00% Investment Returns Per Year

Age at Hire	Age at Retirement			
	55	60	62	65
20	77%	113%	132%	168%
25	57%	85%	100%	128%
30	41%	63%	74%	96%
35	29%	45%	54%	71%
40	19%	32%	38%	51%
45	11%	21%	26%	36%

Replacement Ratios for a 13.25% DC Plan

6.00% Investment Returns Per Year

Age at Hire	Age at Retirement			
	55	60	62	65
20	52%	71%	81%	98%
25	41%	57%	65%	80%
30	31%	45%	52%	65%
35	23%	35%	40%	51%
40	16%	26%	30%	39%
45	10%	18%	22%	29%

4.00% Investment Returns Per Year

Age at Hire	Age at Retirement			
	55	60	62	65
20	36%	46%	51%	60%
25	30%	39%	44%	52%
30	24%	33%	37%	45%
35	19%	27%	31%	37%
40	14%	21%	24%	30%
45	9%	15%	18%	24%

Note: Color coding indicates change in Replacement Ratio from current plan to DC alternative:

- Green indicates "winner" / increase in benefit
- Red indicates "loser" / decrease in benefit

Alternate DC Levels – Alternate Contribution Levels

Alternate DC Plan 15.25% Contribution Level

Age at Hire	Age at Retirement			
	55	60	62	65
20	60%	82%	93%	113%
25	47%	66%	75%	92%
30	36%	52%	60%	74%
35	27%	40%	47%	59%
40	19%	29%	35%	45%
45	11%	20%	25%	33%

Replacement Ratios Assume 6.00% Return on Investments Each Year

Alternate DC Plan 13.25% Contribution Level

Age at Hire	Age at Retirement			
	55	60	62	65
20	52%	71%	81%	98%
25	41%	57%	65%	80%
30	31%	45%	52%	65%
35	23%	35%	40%	51%
40	16%	26%	30%	39%
45	10%	18%	22%	29%

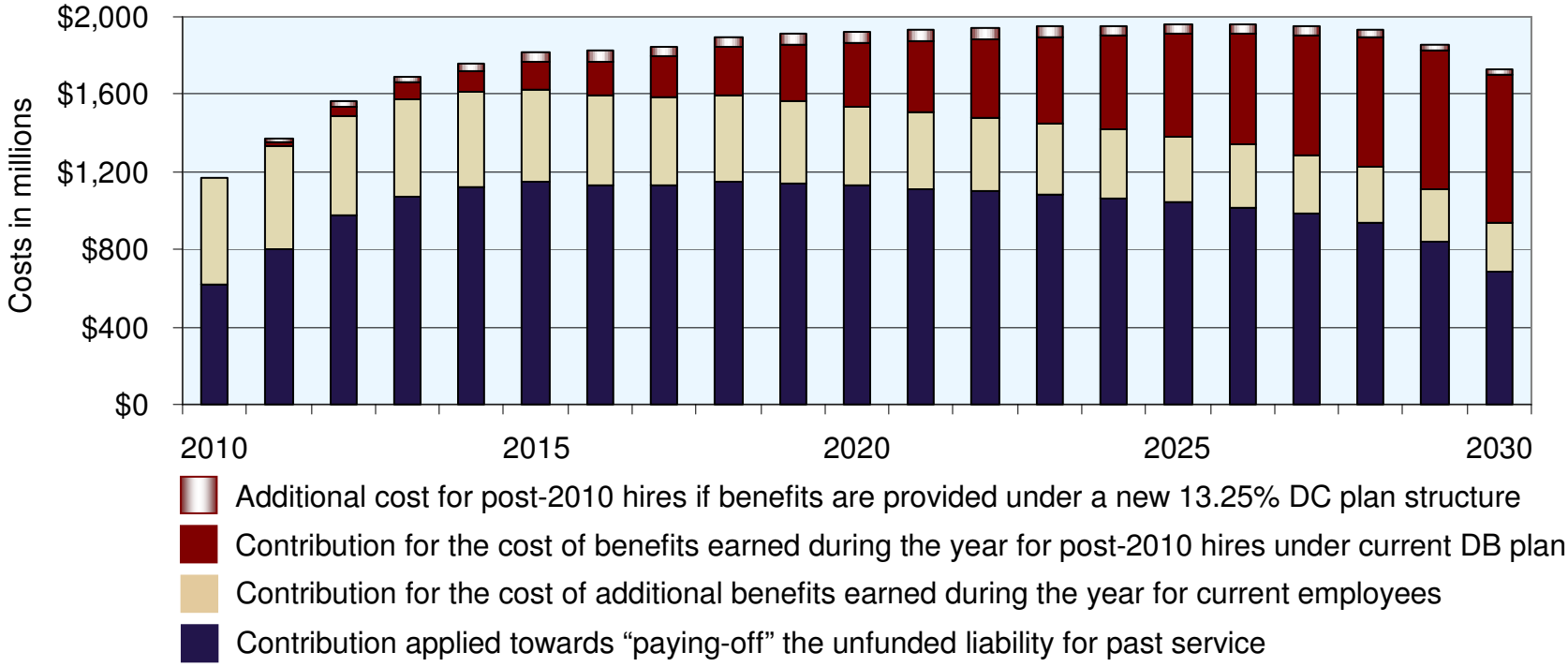
Alternate DC Plan 11.25% Contribution Level

Age at Hire	Age at Retirement			
	55	60	62	65
20	44%	60%	69%	84%
25	35%	49%	56%	68%
30	27%	38%	44%	55%
35	20%	29%	34%	43%
40	14%	22%	26%	33%
45	8%	15%	18%	25%

Note: Color coding indicates change in Replacement Ratio from current plan to DC alternative:

- Green indicates "winner" / increase in benefit
- Red indicates "loser" / decrease in benefit

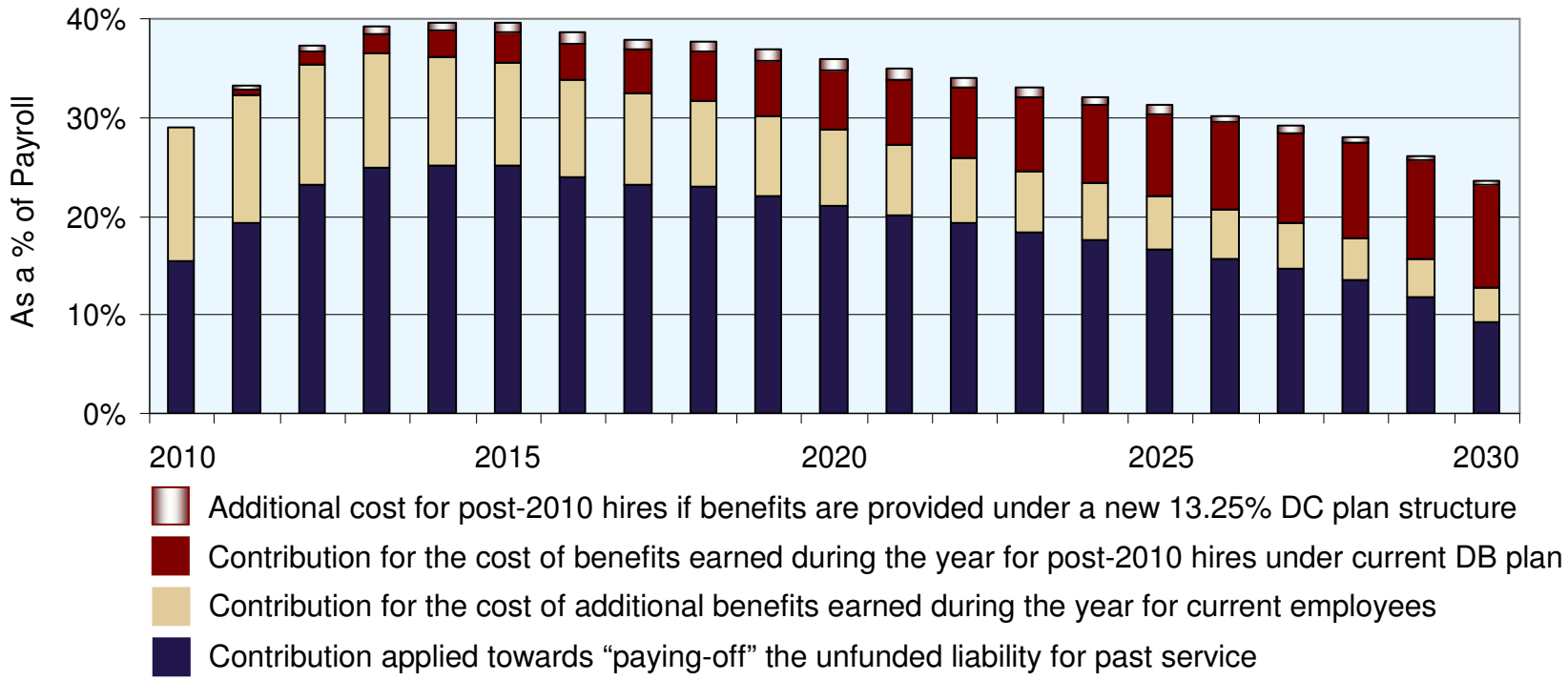
Projected Contribution Requirements for Pension



Comments

- Based on a valuation interest rate of 8.25%
- Assumes return on DB plan investments of 8.25% each year
- Annual amounts shown represent both employer and employee contributions
- Contributions are made each year equal to the minimum required amount

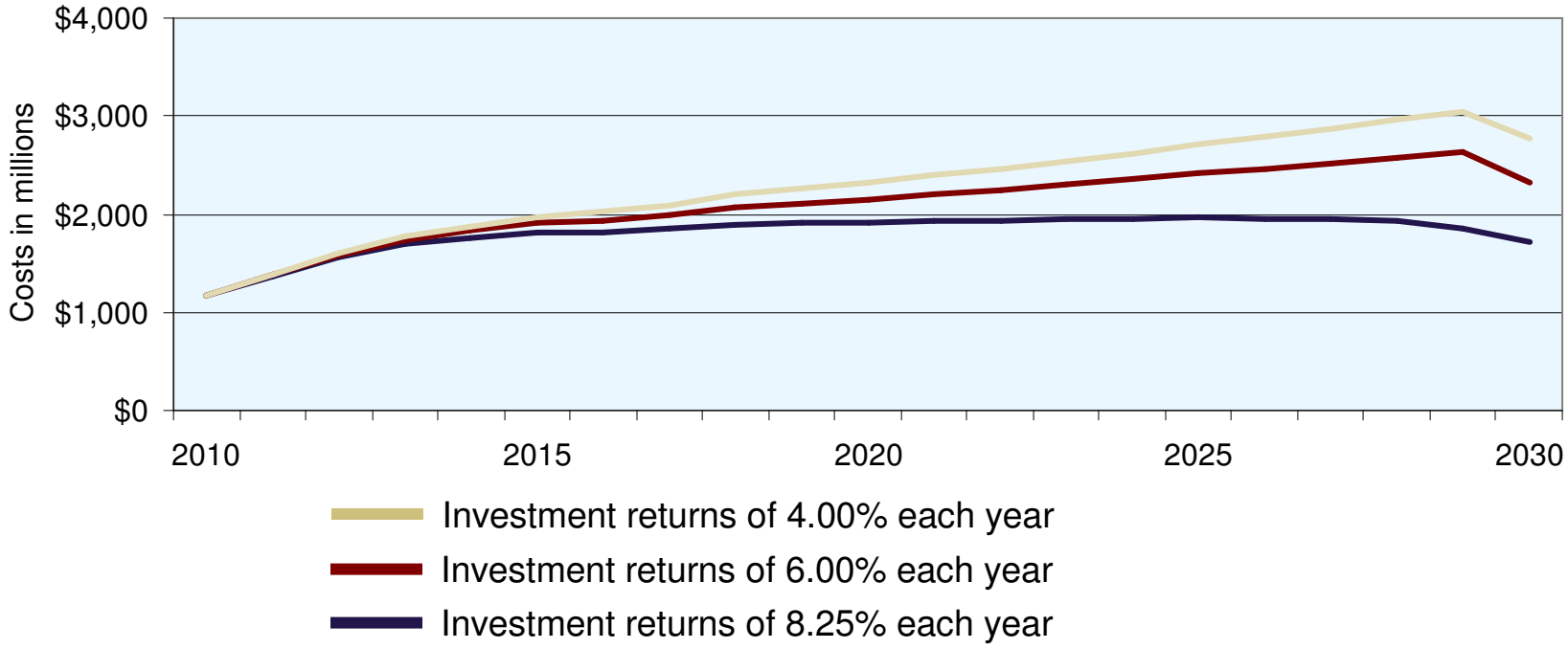
Projected Contribution Requirements for Pension



Comments

- Based on a valuation interest rate of 8.25%
- Assumes return on DB plan investments of 8.25% each year
- Annual amounts shown represent both employer and employee contributions
- Contributions are made each year equal to the minimum required amount

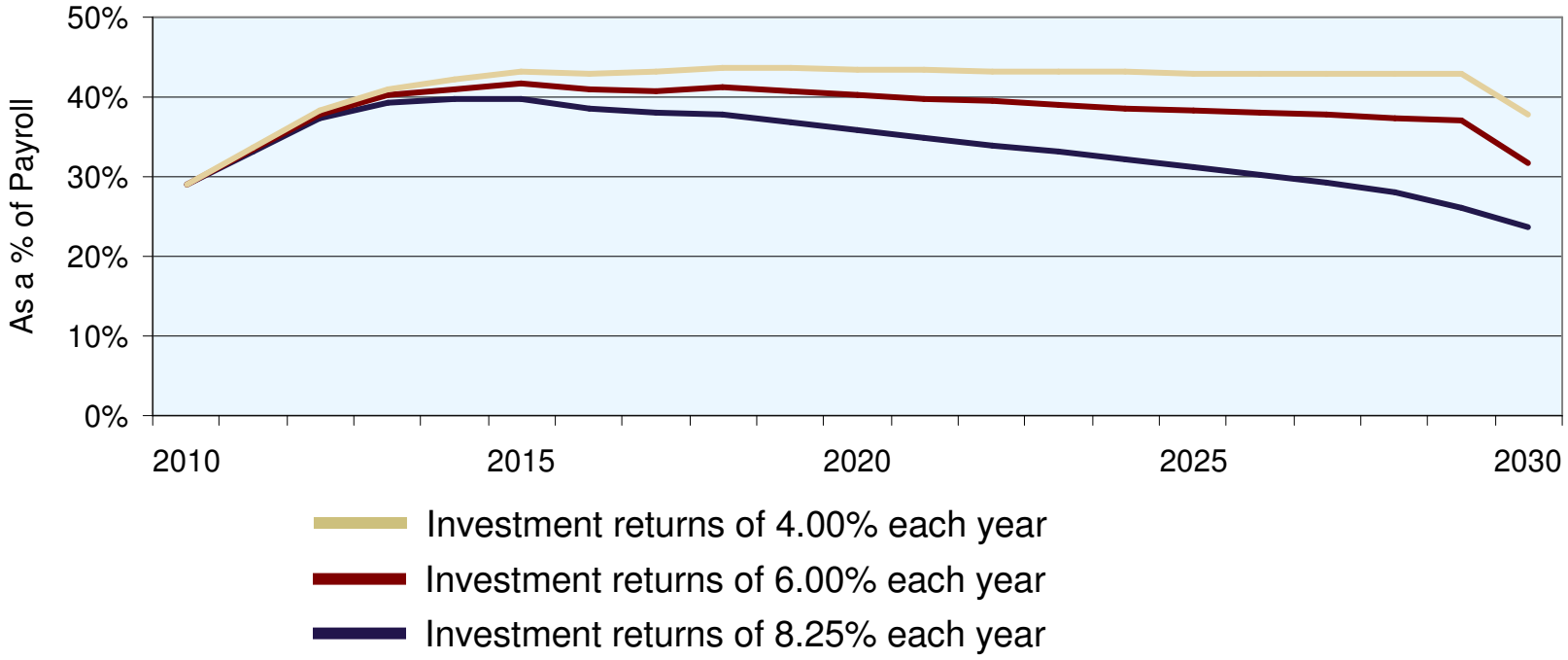
Projected Contribution Requirements for Pension



Comments

- Lines represent total costs of retirement program with 13.25% DC plan for post-2010 hires
- Based on a valuation interest rate of 8.25%
- Assumes return on DB plan investments as shown of 8.25%, 6.00% or 4.00%
- Annual amounts shown represent both employer and employee contributions
- Contributions are made each year equal to the minimum required amount

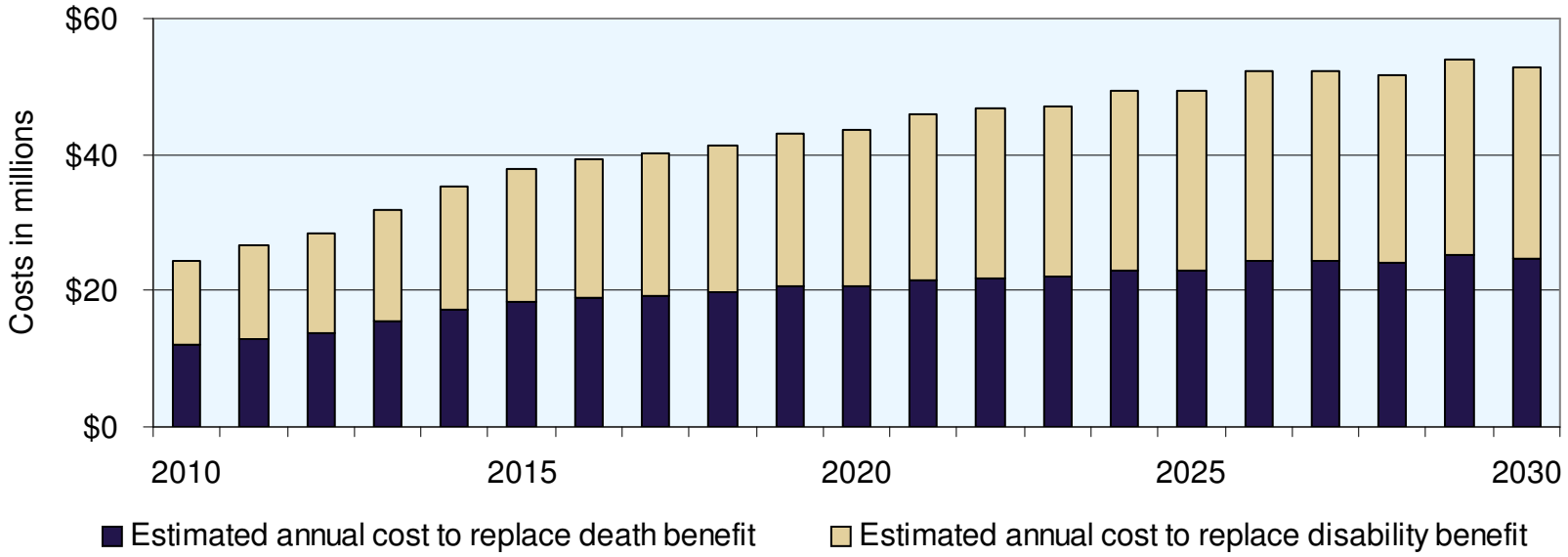
Projected Contribution Requirements for Pension



Comments

- Lines represent total costs of retirement program with 13.25% DC plan for post-2010 hires
- Based on a valuation interest rate of 8.25%
- Assumes return on DB plan investments as shown of 8.25%, 6.00% or 4.00%
- Annual amounts shown represent both employer and employee contributions
- Contributions are made each year equal to the minimum required amount

Projected Cost of Replacing Ancillary Benefits



Comments

- Cost of disability and in-service death coverage for post-2010 hires would rise rapidly over the years following implementation of DC coverage
- The value of these benefits would reach $893 million by 2030
- If funded through group insurance (which would eliminate risks for the state), the cost would be greater

Observations and Conclusions

- DC plan for post-2010 hires with contributions of 13.25% of pay would not cost significantly more than the current DB plan
- But some big losers and some big winners – benefits are distributed in entirely different manner
- Projected annual contribution requirements for unfunded liability
  - Assuming 8.25% asset returns, amortization payments range from high of $1.2 billion (23% of payroll) to low of $0.6 billion (9% of payroll) at end of the projection period
  - Amortization payments increase substantially if actual asset returns are lower
    - Assuming 6.00% returns, payments are as high as $1.6 billion a year
    - Assuming 4.00% returns, payments are as high as $2.1 billion a year
- Projected annual costs for benefits earned each year (normal costs)
  - Annual costs for existing employees decline from about $550 million (14% of payroll) currently to $255 million (4% of payroll) at end of projection period
  - Cost to provide benefits for post-2010 hires by the year 2030
    - Projected to exceed $760 million a year
    - As much as $60 million higher a year to provide through DC plan

Observations and Conclusions

- By the year 2030, over 40% of contributions to the retirement program are expected to be going into the DC plan
- Any COLAs would need to be provided outside of the retirement plan
- Cost of disability and in-service death coverage for post-2010 hires would rise rapidly over the years following implementation of DC coverage
  - The value of these benefits would reach $893 million by 2030
  - If funded through group insurance (which would eliminate risks for the state), the cost would be greater
- Significant underlying assumptions (which may or may not hold):
  - Ability of DC plan participants to achieve an 8% return on their funds
    - Historically, DC plan funds have earned lower returns than those held in DB plans.
    - Particularly difficult to attain such returns in the early years of the DC plan, when trust will be small
  - Ability of legacy DB plan to continue to achieve current assumed investment returns as it matures

Data, Assumptions, Methods and Plan Provisions

- Interest discount rate of 8.25% for all years
- Census data as of June 30, 2009
- Plan liabilities are determined using the projected unit credit funding method
- Unless otherwise noted, asset returns are equal to 8.25% per year net of administrative expenses
  - Expenses for investment advisors equal to .18% of assets
  - All other expenses increase by 2.00% per year
- 20% of investment returns are attributed to realized gains/losses
- Asset returns on an AVA basis in excess of 8.25%:
  - First $100 million reduce the OAB and next $100 million reduce the EAAB
  - Provide retiree COLAs (50% of the amount in excess of $200m)

Data, Assumptions, Methods and Plan Provisions

- Contributions to the plan are made by only the employer and employees
- IUALAF assumed to be exhausted as of June 30, 2010 to reduce the OAB and EAAB per Act 497
  - The IUALAF and ECA will not be used in future years to reduce funding requirements
- All other assumptions, actuarial methods and plan provisions are as outlined in the 2009 valuation reports

Key definitions:

IUALAF - Initial Unfunded Accrued Liability Amortization Fund

OAB - Original Amortization Base

EAAB - Experience Account Amortization Base

ECA - Employer Credit Account

State Police Retirement System

Current Plan

Plan formula: monthly benefit equal to 3.33% of the average salary during the last three years multiplied by service

Example:

Average of highest three consecutive years of salary in last 10 years of employment = $33,000

Annual benefit = 3.33% x $33,000 x 35 years of service = $33,000

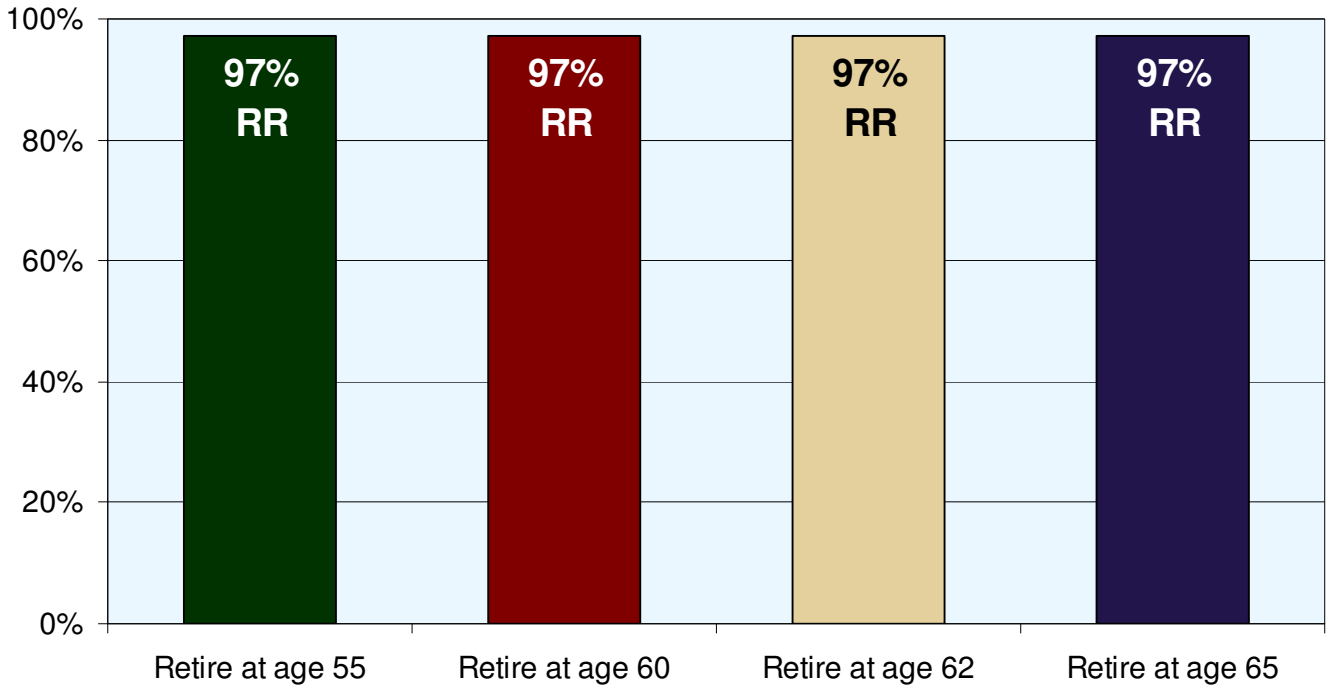
Replacement income ratio (RR): Portion of salary in the year before retirement that is "replaced" by the retirement benefit.

Salary in last year of employment = $35,000

RR = $33,000 ÷ $35,000 = 94%

Current Plan - Replacement Ratio Analysis

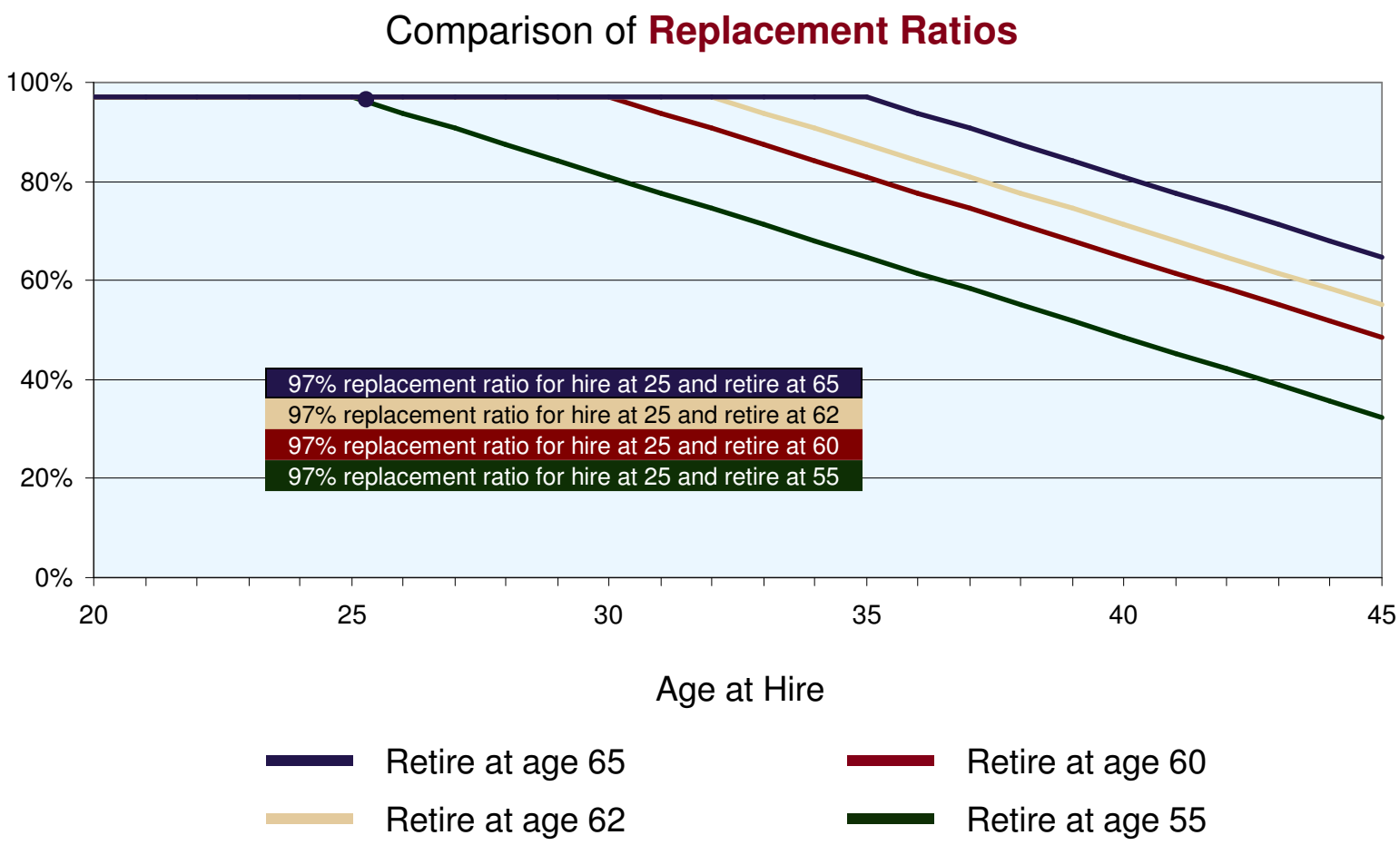
Sample **Replacement Ratios** at Varying Retirement Ages



Comments

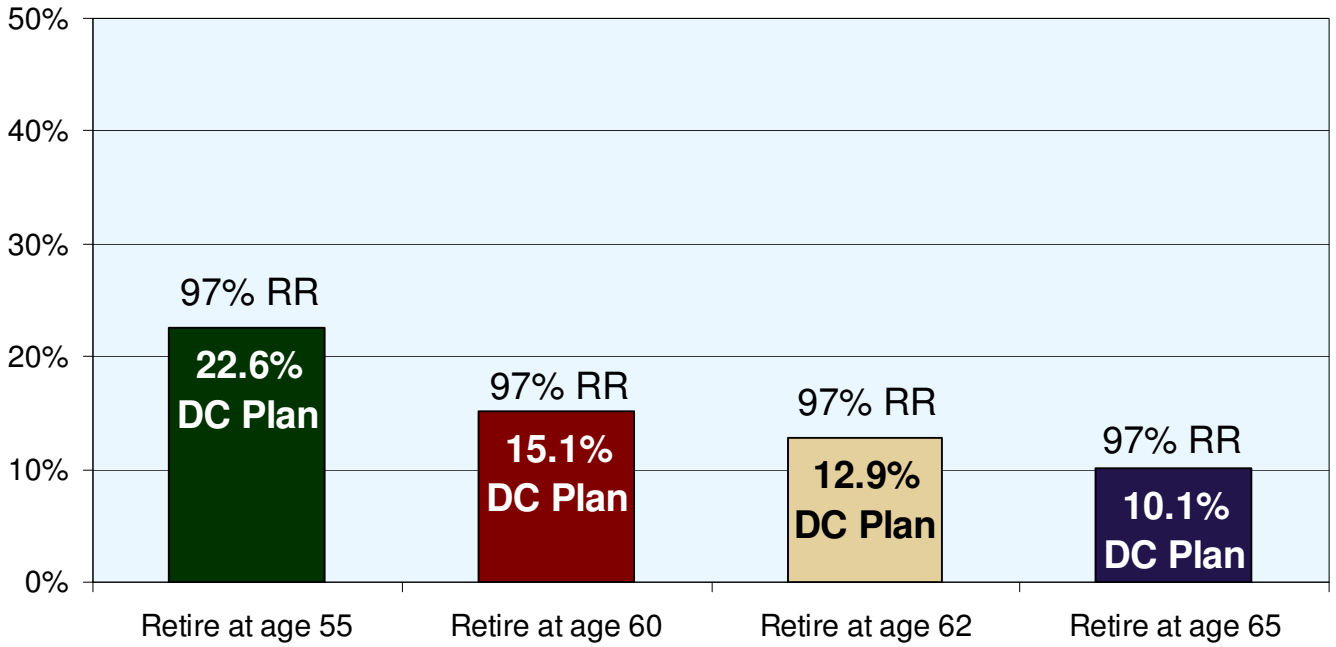
- Based on sample employee hired at age 25
- Replacement income is independent of salary level

Current Plan - Replacement Ratio Analysis



DC Plan Alternative – Annual Contribution Rate

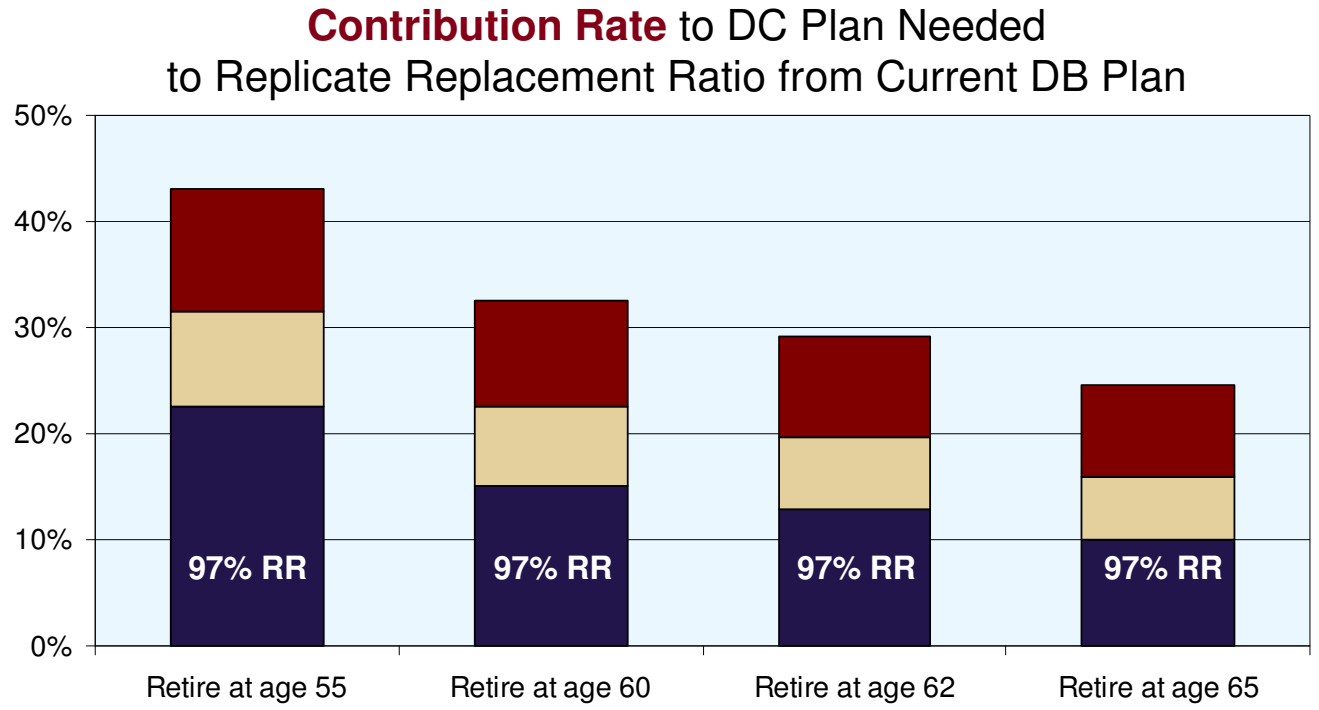
Contribution Rate to DC Plan Needed
to Replicate Replacement Ratio from Current DB Plan



Comments

- Based on sample employee hired at age 25
- Assumes return on investments of 8.00% each year

DC Plan Alternative – Annual Contribution Rate

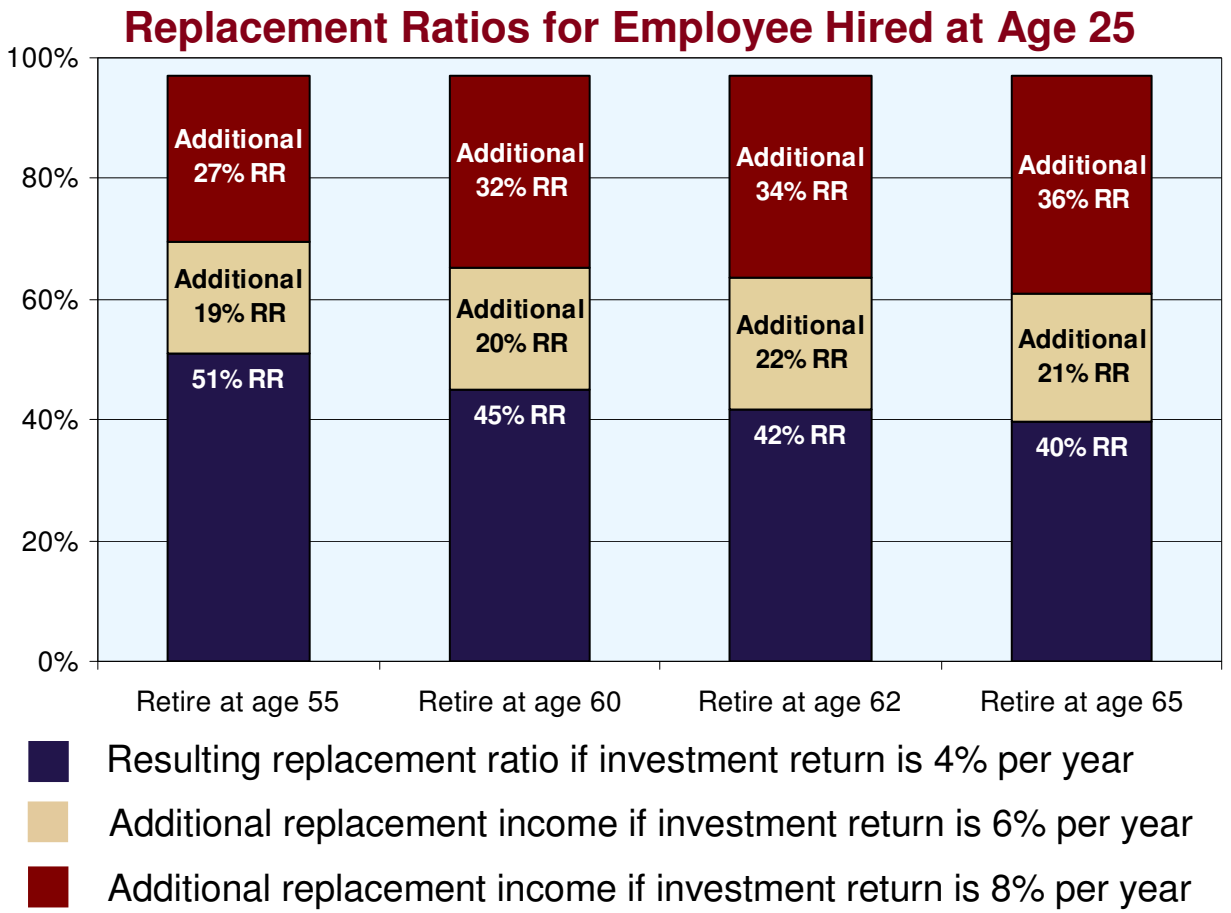


- Contribution rate required if investment return is 8% per year
- Additional contribution required if return is 6% per year (about 6.50% more each year)
- Additional contribution required if return is 4% per year (about 8.75% more each year)

Comments

- Based on sample employee hired at age 25

DC Plan Alternative – Replacement Ratio Analysis



Note: DC contribution rates are 22.6%, 15.1%, 12.9% and 10.1% when retiring at ages 55, 60, 62 and 65, respectively.

Current Plan – Replacement Ratio Analysis

Replacement Ratios for Current DB Plan Structure

Age at Hire	Age at Retirement			
	55	60	62	65
20	97%	97%	97%	97%
25	97%	97%	97%	97%
30	81%	97%	97%	97%
35	65%	81%	87%	97%
40	49%	65%	71%	81%
45	32%	49%	55%	65%

Comments

- Replacement income under current DB plan structure varies widely depending on age at retirement and years worked
- Recommended DC contribution percentage will be uniform regardless of age at retirement
- Select employee profile of age 25 at hire and retiring at age 55 as basis for setting DC contribution rate

DC Plan Alternative – Replacement Ratio Analysis

Replacement Ratios for 22.50% DC Plan Structure

Age at Hire	Age at Retirement			
	55	60	62	65
20	131%	192%	225%	285%
25	97%	144%	170%	217%
30	70%	107%	126%	163%
35	49%	77%	92%	121%
40	32%	54%	65%	87%
45	19%	35%	44%	61%

Comments

- An annual DC contribution of 22.50% of salary "replicates" the replacement ratio under the DB plan for a participant that is hired at age 25 and retires at age 55
- Assumes that annual investment return is 8.00%

DC Plan Alternative – Alternate Investment Returns

8.00% Investment Returns Per Year

Age at Hire	Age at Retirement			
	55	60	62	65
20	131%	192%	225%	285%
25	97%	144%	170%	217%
30	70%	107%	126%	163%
35	49%	77%	92%	121%
40	32%	54%	65%	87%
45	19%	35%	44%	61%

Replacement Ratios for a 22.50% DC Plan

6.00% Investment Returns Per Year

Age at Hire	Age at Retirement			
	55	60	62	65
20	88%	121%	137%	167%
25	69%	97%	111%	136%
30	53%	77%	88%	110%
35	39%	59%	69%	86%
40	27%	43%	52%	66%
45	17%	30%	37%	49%

4.00% Investment Returns Per Year

Age at Hire	Age at Retirement			
	55	60	62	65
20	61%	79%	87%	102%
25	51%	67%	75%	89%
30	41%	56%	63%	76%
35	32%	45%	52%	63%
40	24%	35%	41%	51%
45	15%	26%	31%	40%

Note: Color coding indicates change in Replacement Ratio from current plan to DC alternative:

- Green indicates “winner” / increase in benefit
- Red indicates “loser” / decrease in benefit

Alternate DC Levels – Alternate Contribution Levels

Alternate DC Plan 24.5% Contribution Level

Age at Hire	Age at Retirement			
	55	60	62	65
20	96%	131%	149%	182%
25	75%	106%	121%	148%
30	58%	83%	96%	119%
35	43%	64%	75%	94%
40	30%	47%	56%	72%
45	18%	33%	40%	53%

Alternate DC Plan 20.5% Contribution Level

Age at Hire	Age at Retirement			
	55	60	62	65
20	80%	110%	125%	152%
25	63%	88%	101%	124%
30	49%	70%	81%	100%
35	36%	54%	63%	79%
40	25%	40%	47%	61%
45	15%	27%	34%	45%

Replacement Ratios Assume 6.00% Return on Investments Each Year

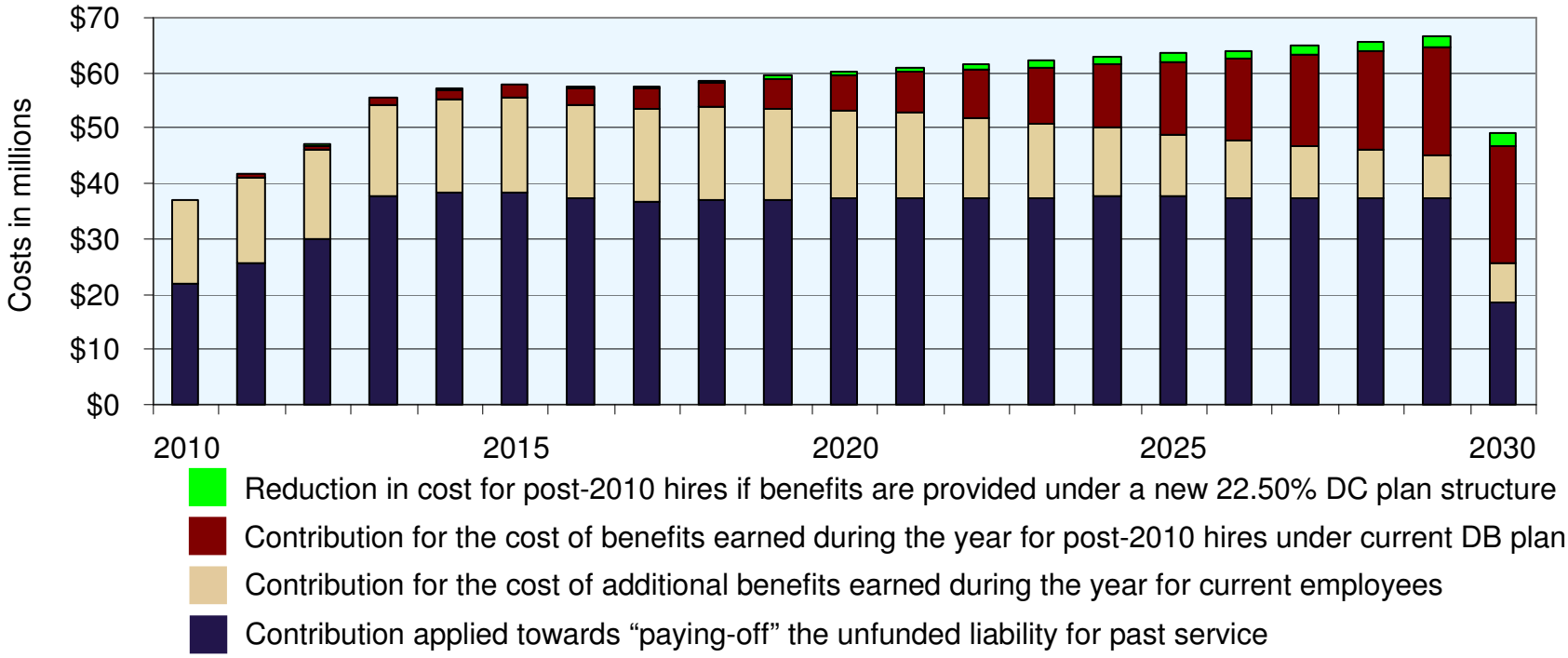
Alternate DC Plan 22.5% Contribution Level

Age at Hire	Age at Retirement			
	55	60	62	65
20	88%	121%	137%	167%
25	69%	97%	111%	136%
30	53%	77%	88%	110%
35	39%	59%	69%	86%
40	27%	43%	52%	66%
45	17%	30%	37%	49%

Note: Color coding indicates change in Replacement Ratio from current plan to DC alternative:

- Green indicates “winner” / increase in benefit
- Red indicates “loser” / decrease in benefit

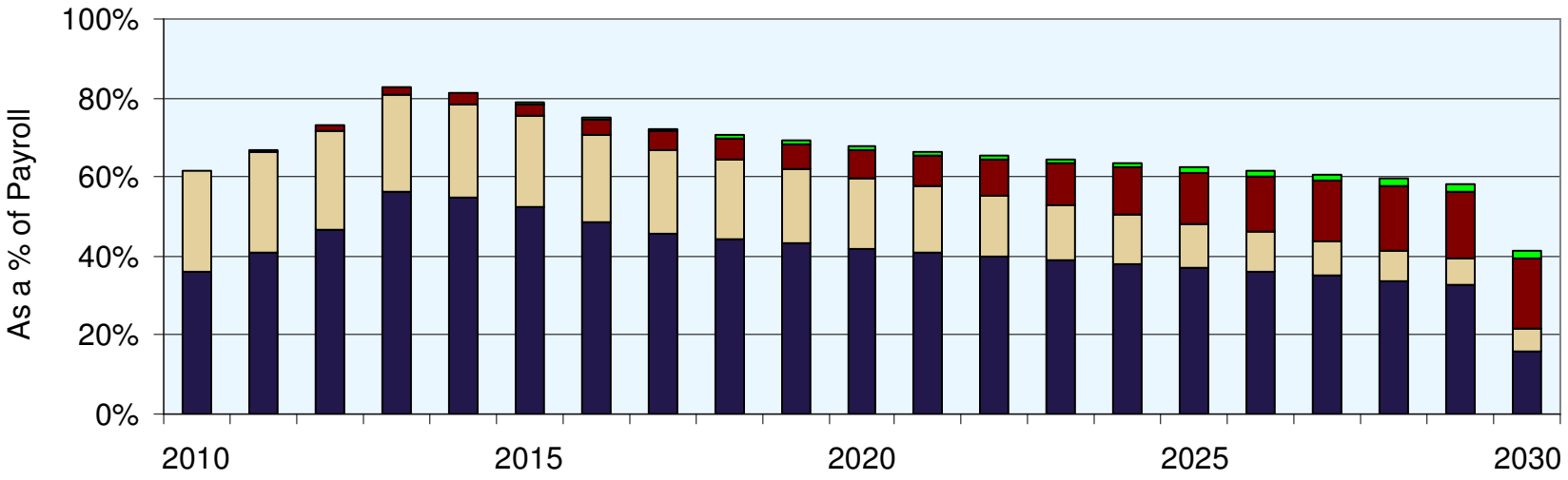
Projected Contribution Requirements for Pension



Comments

- Based on a valuation interest rate of 7.50%
- Assumes return on DB plan investments of 7.50% each year
- Annual amounts shown represent both employer and employee contributions
- Contributions are made each year equal to the minimum required amount

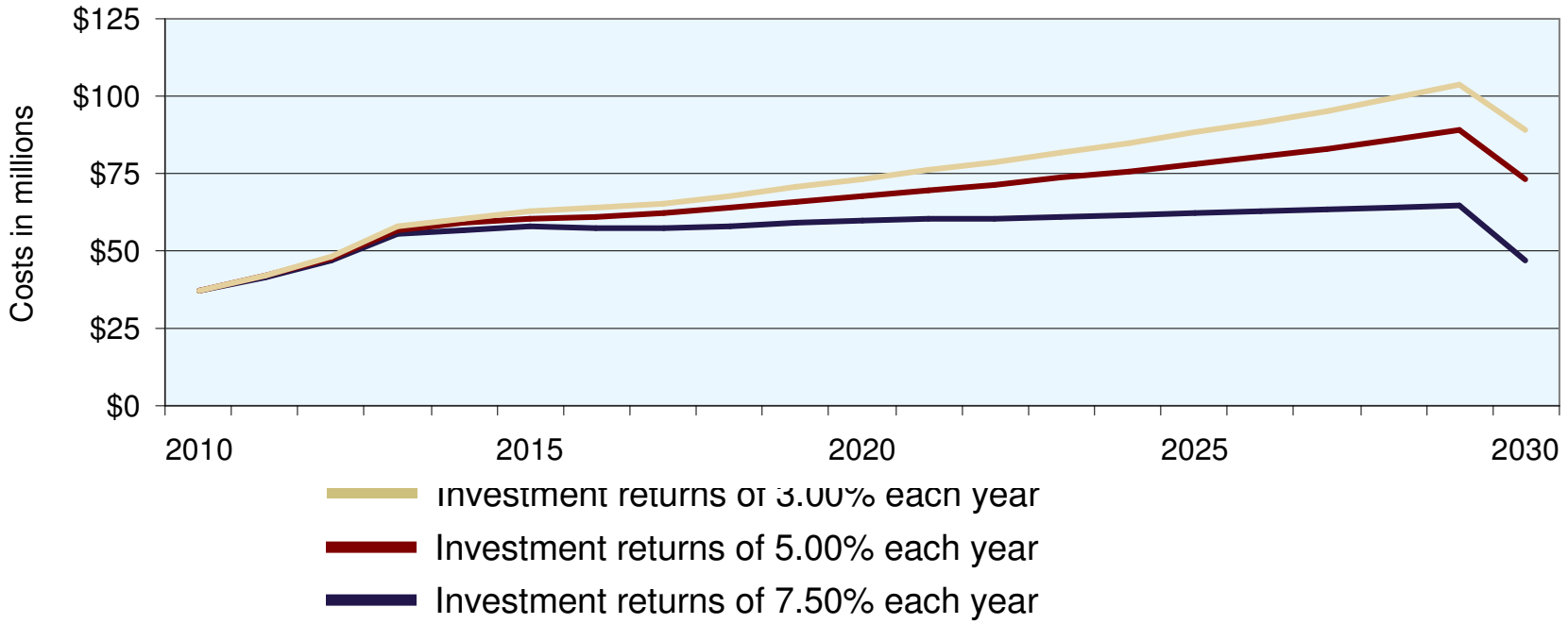
Projected Contribution Requirements for Pension



Comments

- Based on a valuation interest rate of 7.50%
- Assumes return on DB plan investments of 7.50% each year
- Annual amounts shown represent both employer and employee contributions
- Contributions are made each year equal to the minimum required amount

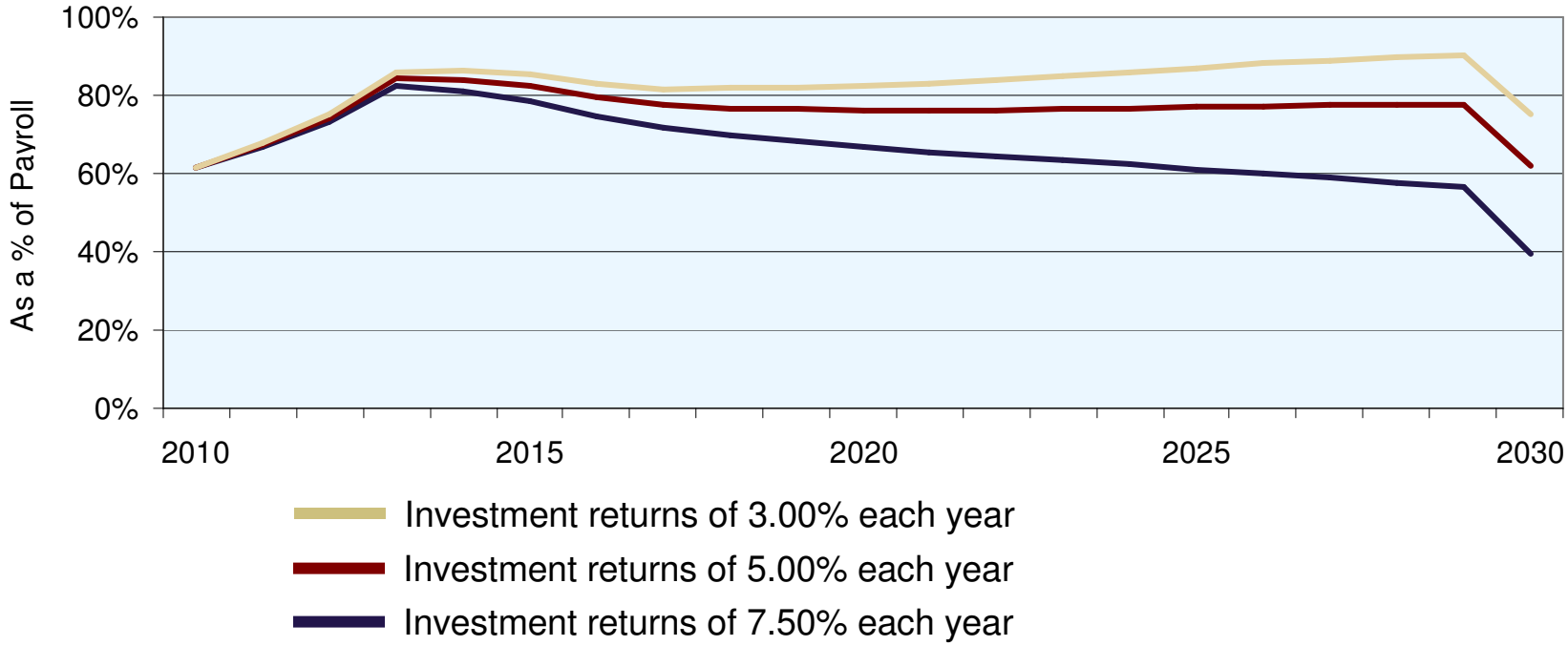
Projected Contribution Requirements for Pension



Comments

- Lines represent total costs of retirement program with 22.50% DC plan for post-2010 hires
- Based on a valuation interest rate of 7.50%
- Assumes return on DB plan investments as shown of 7.50%, 5.00% or 3.00%
- Annual amounts shown represent both employer and employee contributions
- Contributions are made each year equal to the minimum required amount

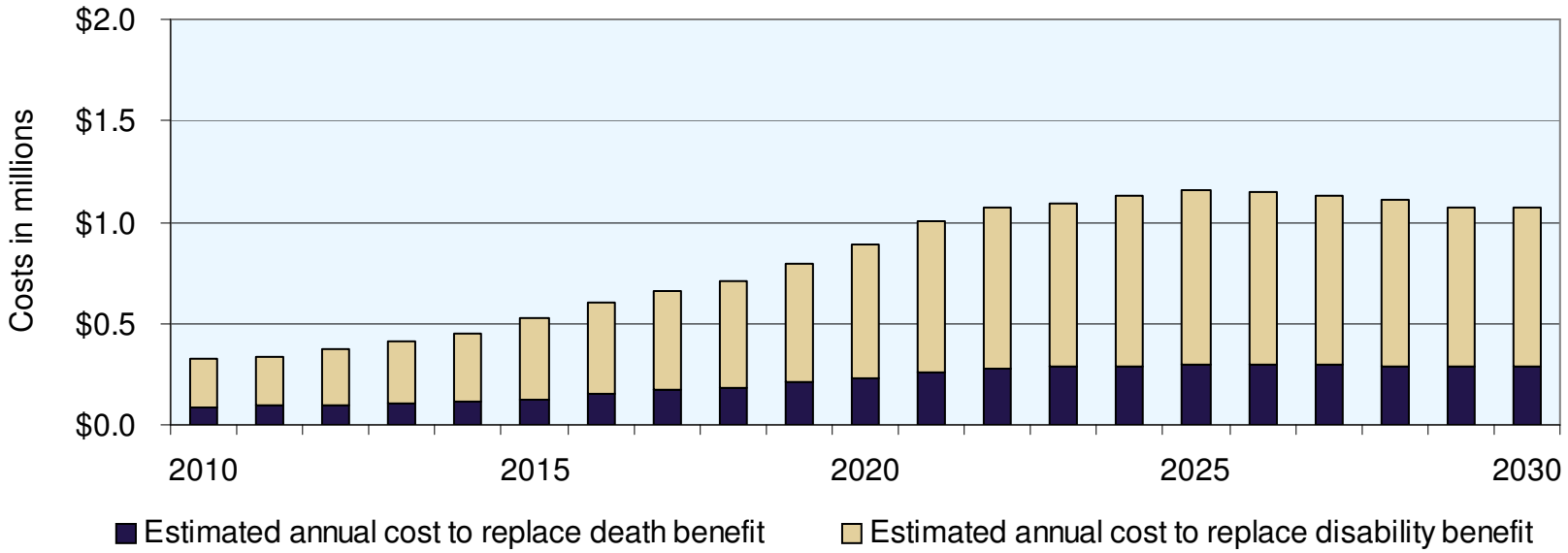
Projected Contribution Requirements for Pension



Comments

- Lines represent total costs of retirement program with 22.50% DC plan for post-2010 hires
- Based on a valuation interest rate of 7.50%
- Assumes return on DB plan investments as shown of 7.50%, 5.00% or 3.00%
- Annual amounts shown represent both employer and employee contributions
- Contributions are made each year equal to the minimum required amount

Projected Cost of Replacing Ancillary Benefits



Comments

- Cost of disability and in-service death coverage for post-2010 hires would rise rapidly over the years following implementation of DC coverage
- The value of these benefits would reach $17 million by 2030
- If funded through group insurance (which would eliminate risks for the state), the cost would be greater

Observations and Conclusions

- DC plan for post-2010 hires with contributions of 22.50% is a reduction from the current plan
  - The reduction is attributable to the unique profile of the plan participant group that is younger than the other three systems and the funding method
    - Average age of group is 38, compared to the mid to late 40's for the other three plans
    - The nature of the entry age normal funding method is to fund costs as a level percentage of salary over the participants' working career – currently at a 25% of pay level
- Some big losers and some big winners – benefits are distributed in entirely different manner
- Projected annual contribution requirements for unfunded liability
  - Assuming 7.50% asset returns, amortization payments range from high of $38 million (56% of payroll) to low of $19 million (16% of payroll) at end of the projection period
  - Amortization payments increase substantially if actual asset returns are lower
    - Assuming 5.00% returns, payments are as high as $62 million a year
    - Assuming 3.00% returns, payments are as high as $76 million a year

Observations and Conclusions

- Projected annual costs for benefits earned each year (normal costs)
  - Annual costs for existing employees are expected to:
    - Increase for the next several years from the current $15 million (25% of payroll) to a high of $17 million (22% of payroll) in 2016
    - Then decline down to $7 million (6% of payroll) by 2030
  - Cost to provide benefits for post-2010 hires by the year 2030
    - Projected to exceed $21 million a year
    - As much as $2 million savings a year to provide through DC plan
- By the year 2030, over 50% of contributions to the retirement program are expected to be going into the DC plan
- Any COLAs would need to be provided outside of the retirement plan

Observations and Conclusions

- Cost of disability and in-service death coverage for post-2010 hires would rise rapidly over the years following implementation of DC coverage
  - The value of these benefits would reach $17 million by 2030
  - If funded through group insurance (which would eliminate risks for the state), the cost would be greater
- Significant underlying assumptions (which may or may not hold):
  - Ability of DC plan participants to achieve an 8% return on their funds
    - Historically, DC plan funds have earned lower returns than those held in DB plans.
    - Particularly difficult to attain such returns in the early years of the DC plan, when trust will be small
  - Ability of legacy DB plan to continue to achieve current assumed investment returns as it matures

Data, Assumptions, Methods and Plan Provisions

- Interest discount rate of 7.50% for all years
- Census data as of June 30, 2009
- Plan liabilities are determined using the entry age normal funding method
- Unless otherwise noted, asset returns are equal to 7.50% per year net of administrative expenses
  - Expenses for investment advisors equal to .25% of assets
  - Expenses increase by 2.00% per year
- 20% of investment returns are attributed to realized gains/losses
- Contributions to the plan are made by only the employer and employees
- All other assumptions, actuarial methods and plan provisions are as outlined in the 2009 valuation reports
- Assume the Insurance Premium Tax continues at $1.5 million per year

Louisiana School Employees' Retirement System

Current Plan

Plan formula: monthly benefit equal to 3.33% of the average salary during the last five years multiplied by service

Plus Supplemental Benefit

Example:

Average of highest five consecutive years of salary in last 10 years of employment = $33,000

Annual benefit = 3.33% x $33,000 x 25 years of service

\+ $24 x 25 years of service = $28,100

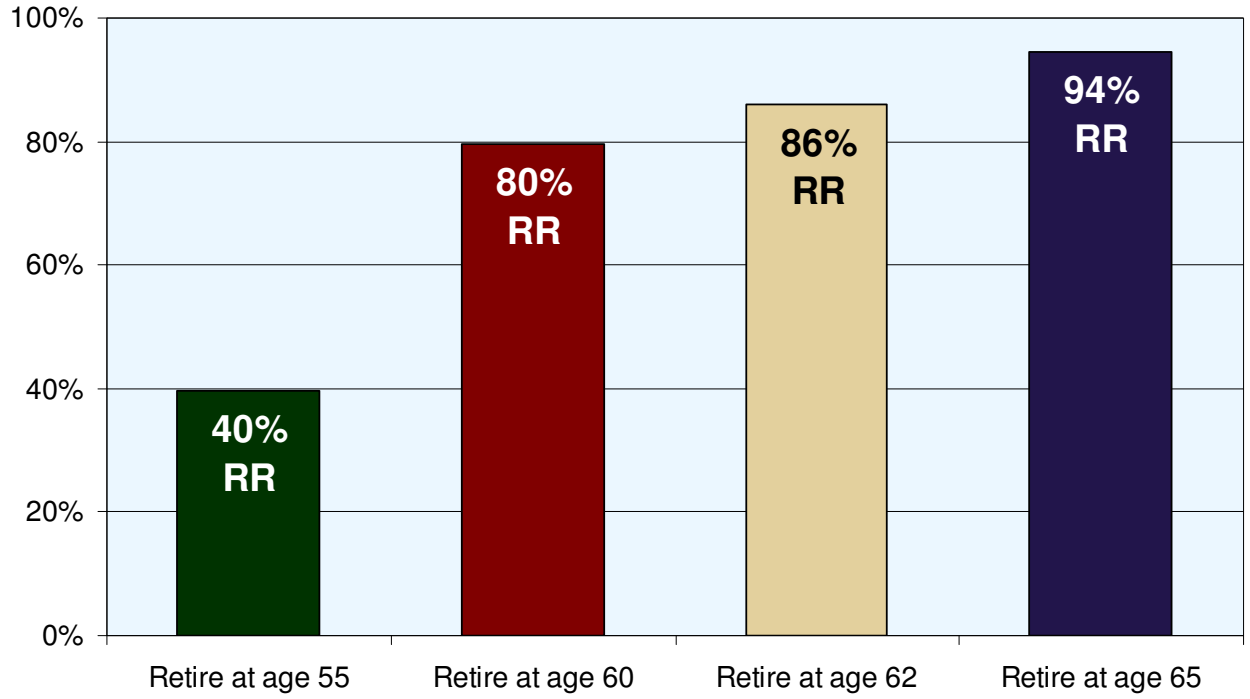
Replacement income ratio (RR): Portion of salary in the year before retirement that is "replaced" by the retirement benefit.

Salary in last year of employment = $35,000

RR = $28,100 ÷ $35,000 = 80%

Current Plan - Replacement Ratio Analysis

Sample **Replacement Ratios** at Varying Retirement Ages

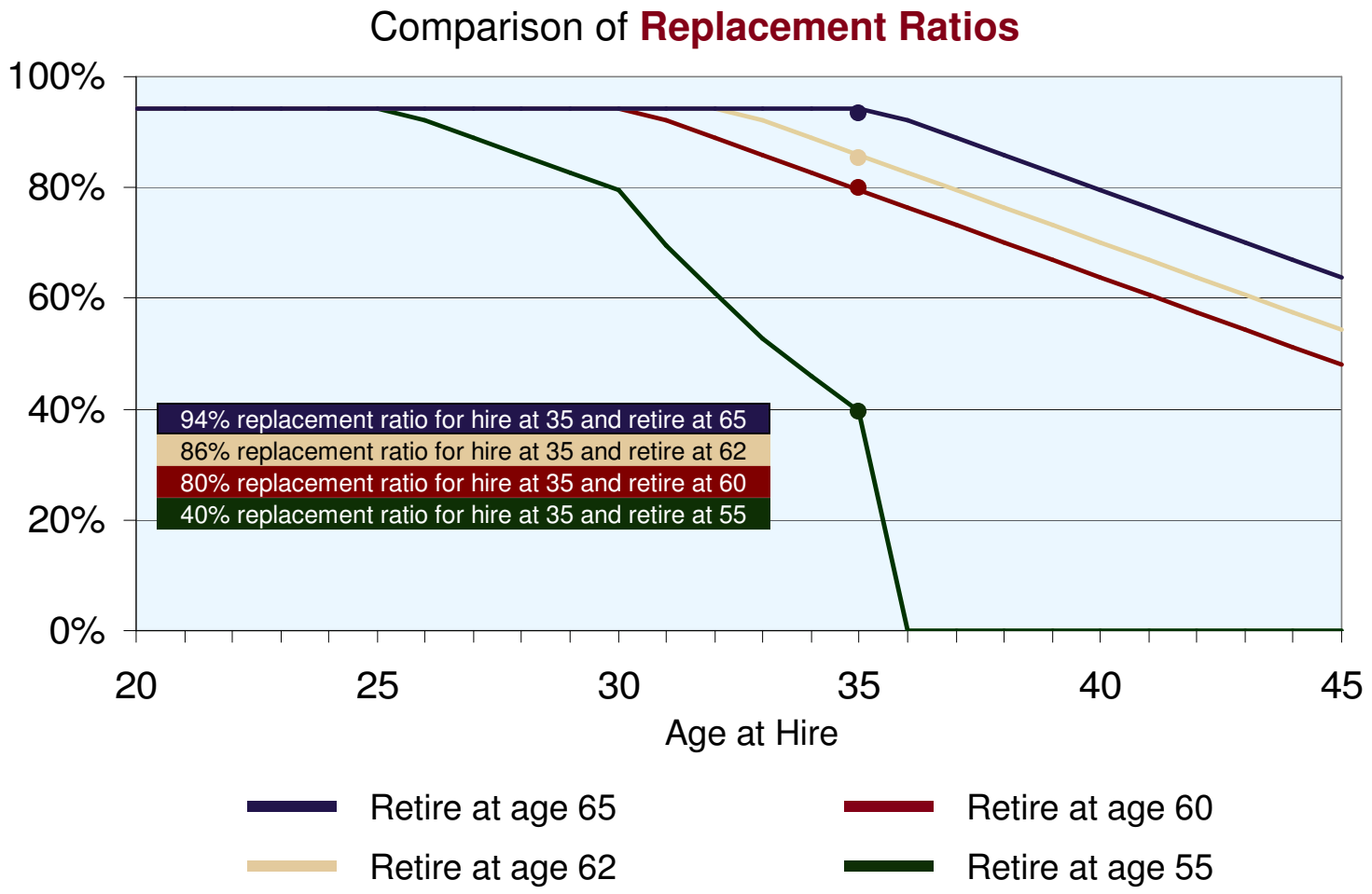


Comments

- Based on sample employee hired at age 35
- Replacement income is independent of salary level
- Reductions for early retirement apply for retirement at age 55

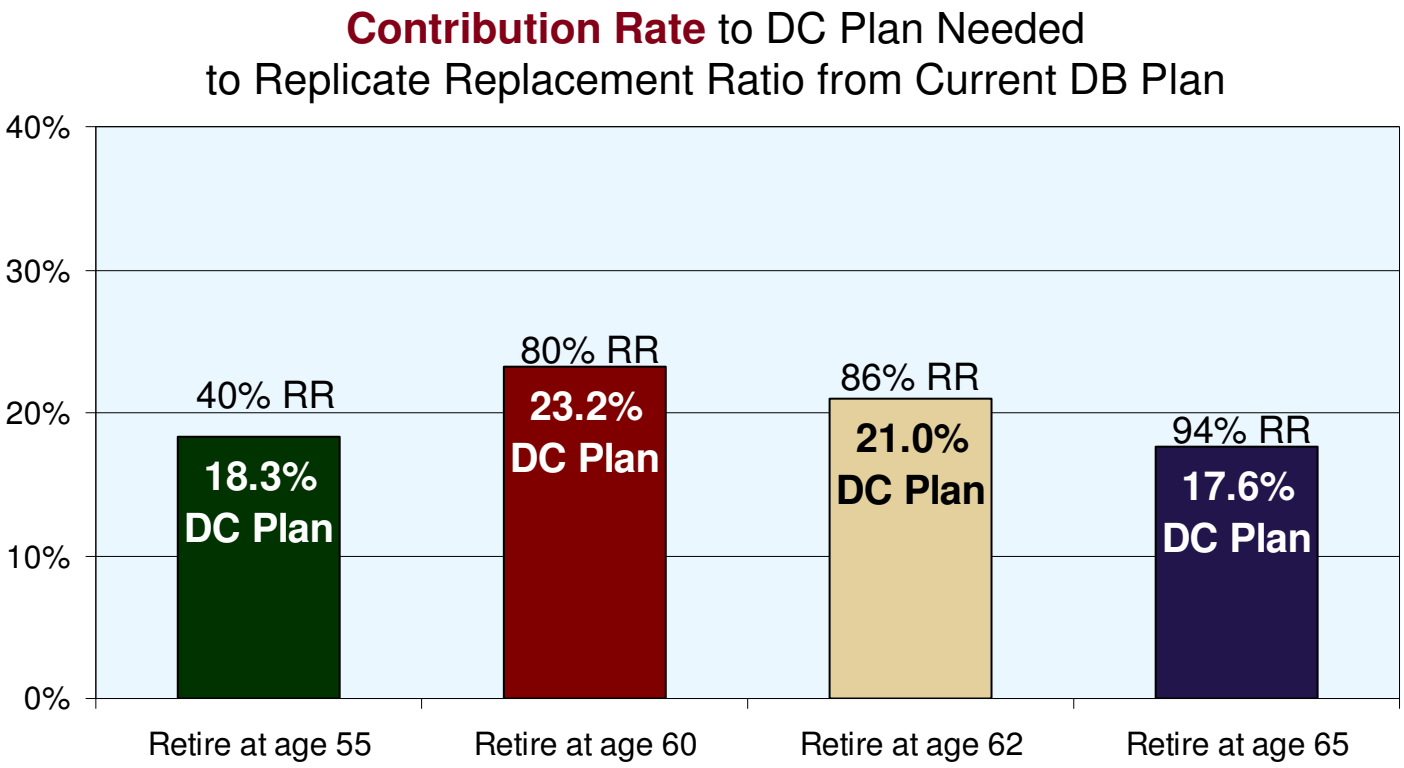
buckconsultants

Current Plan - Replacement Ratio Analysis



buckconsultants

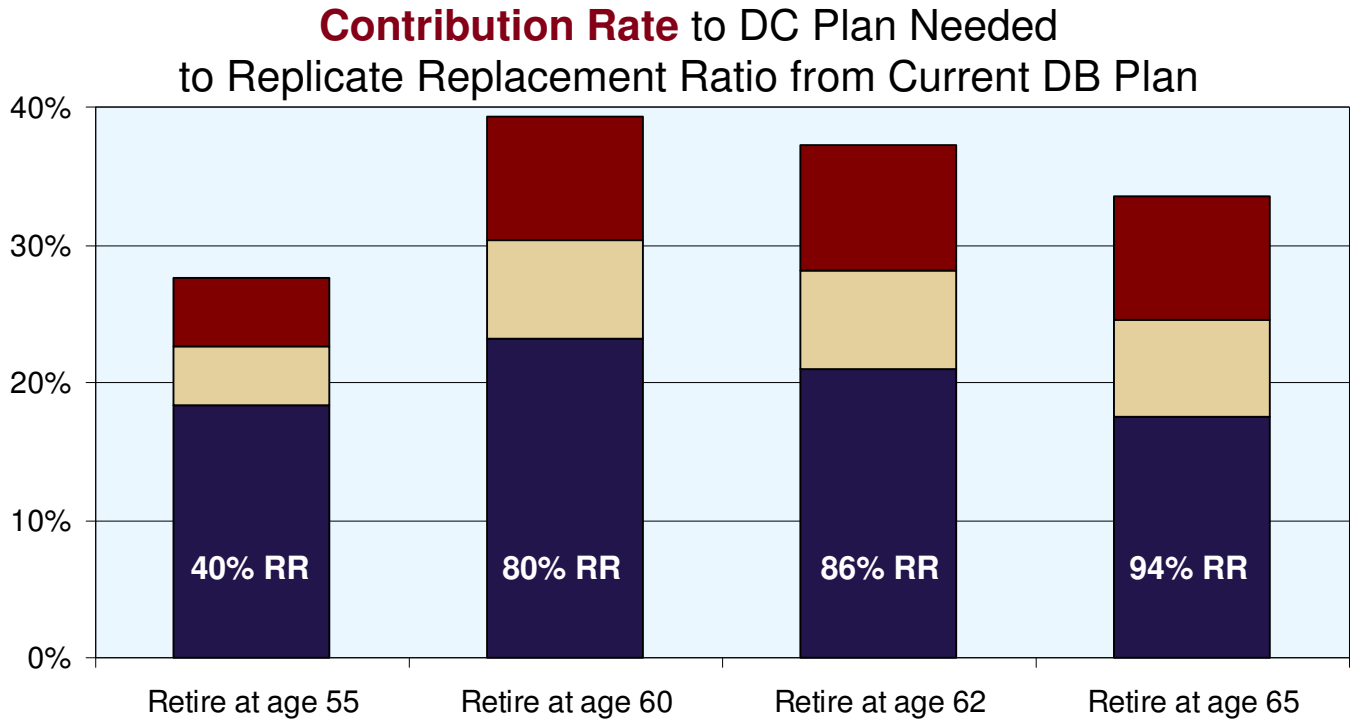
DC Plan Alternative – Annual Contribution Rate



Comments

- Based on sample employee hired at age 35
- Assumes return on investments of 8.00% each year

DC Plan Alternative – Annual Contribution Rate



Contribution rate required if investment return is 8% per year

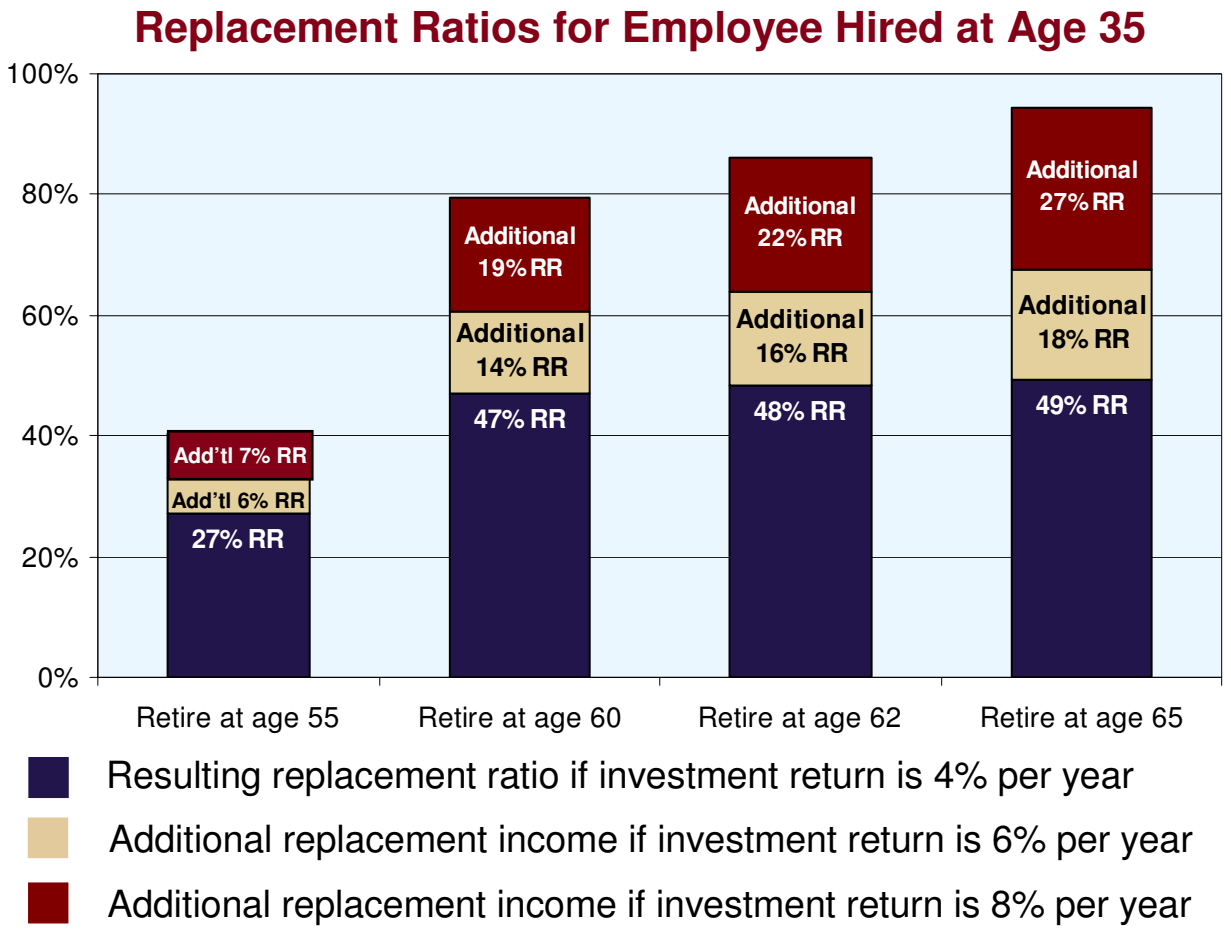
Additional contribution required if return is 6% per year (about 7.25% more each year)

Additional contribution required if return is 4% per year (about 9.25% more each year)

Comments

- Based on sample employee hired at age 35

DC Plan Alternative – Replacement Ratio Analysis



Note: DC contribution rates are 18.3%, 23.2%, 21.0% and 17.6% when retiring at ages 55, 60, 62 and 65, respectively.

Current Plan – Replacement Ratio Analysis

Replacement Ratios for Current DB Plan Structure

Age at Hire	Age at Retirement			
	55	60	62	65
20	94%	94%	94%	94%
25	94%	94%	94%	94%
30	80%	94%	94%	94%
35	40%	80%	86%	94%
40	N/A	64%	70%	80%
45	N/A	48%	54%	64%

Comments

- Replacement income under current DB plan structure varies widely depending on age at retirement and years worked
- Recommended DC contribution percentage will be uniform regardless of age at retirement
- Select employee profile of age 35 at hire and retiring at age 60 as basis for setting DC contribution rate

DC Plan Alternative – Replacement Ratio Analysis

Replacement Ratios for 23.25% DC Plan Structure

Age at Hire	Age at Retirement			
	55	60	62	65
20	135%	198%	232%	295%
25	100%	149%	175%	224%
30	72%	110%	131%	169%
35	50%	80%	95%	125%
40	33%	55%	67%	90%
45	19%	36%	45%	63%

Comments

- An annual DC contribution of 23.25% of salary "replicates" the replacement ratio under the DB plan for a participant that is hired at age 35 and retires at age 60
- Assumes that annual investment return is 8.00%

DC Plan Alternative – Alternate Investment Returns

8.00% Investment Returns Per Year

Age at Hire	Age at Retirement			
	55	60	62	65
20	135%	198%	232%	295%
25	100%	149%	175%	224%
30	72%	110%	131%	169%
35	50%	80%	95%	125%
40	33%	55%	67%	90%
45	19%	36%	45%	63%

Replacement Ratios for a 23.25% DC Plan

6.00% Investment Returns Per Year

Age at Hire	Age at Retirement			
	55	60	62	65
20	91%	125%	142%	173%
25	72%	100%	115%	141%
30	55%	79%	91%	113%
35	41%	61%	71%	89%
40	28%	45%	53%	69%
45	17%	31%	38%	51%

4.00% Investment Returns Per Year

Age at Hire	Age at Retirement			
	55	60	62	65
20	63%	81%	90%	106%
25	52%	69%	77%	92%
30	43%	58%	65%	78%
35	33%	47%	54%	65%
40	24%	37%	43%	53%
45	16%	27%	32%	41%

Note: Color coding indicates change in Replacement Ratio from current plan to DC alternative:

- Green indicates "winner" / increase in benefit
- Red indicates "loser" / decrease in benefit

Alternate DC Levels – Alternate Contribution Levels

Alternate DC Plan 25.25% Contribution Level

Age at Hire	Age at Retirement			
	55	60	62	65
20	99%	135%	154%	188%
25	78%	109%	125%	153%
30	60%	86%	99%	123%
35	44%	66%	77%	97%
40	31%	49%	58%	75%
45	19%	34%	41%	55%

Alternate DC Plan 23.25% Contribution Level

Age at Hire	Age at Retirement			
	55	60	62	65
20	91%	125%	142%	173%
25	72%	100%	115%	141%
30	55%	79%	91%	113%
35	41%	61%	71%	89%
40	28%	45%	53%	69%
45	17%	31%	38%	51%

Alternate DC Plan 21.25% Contribution Level

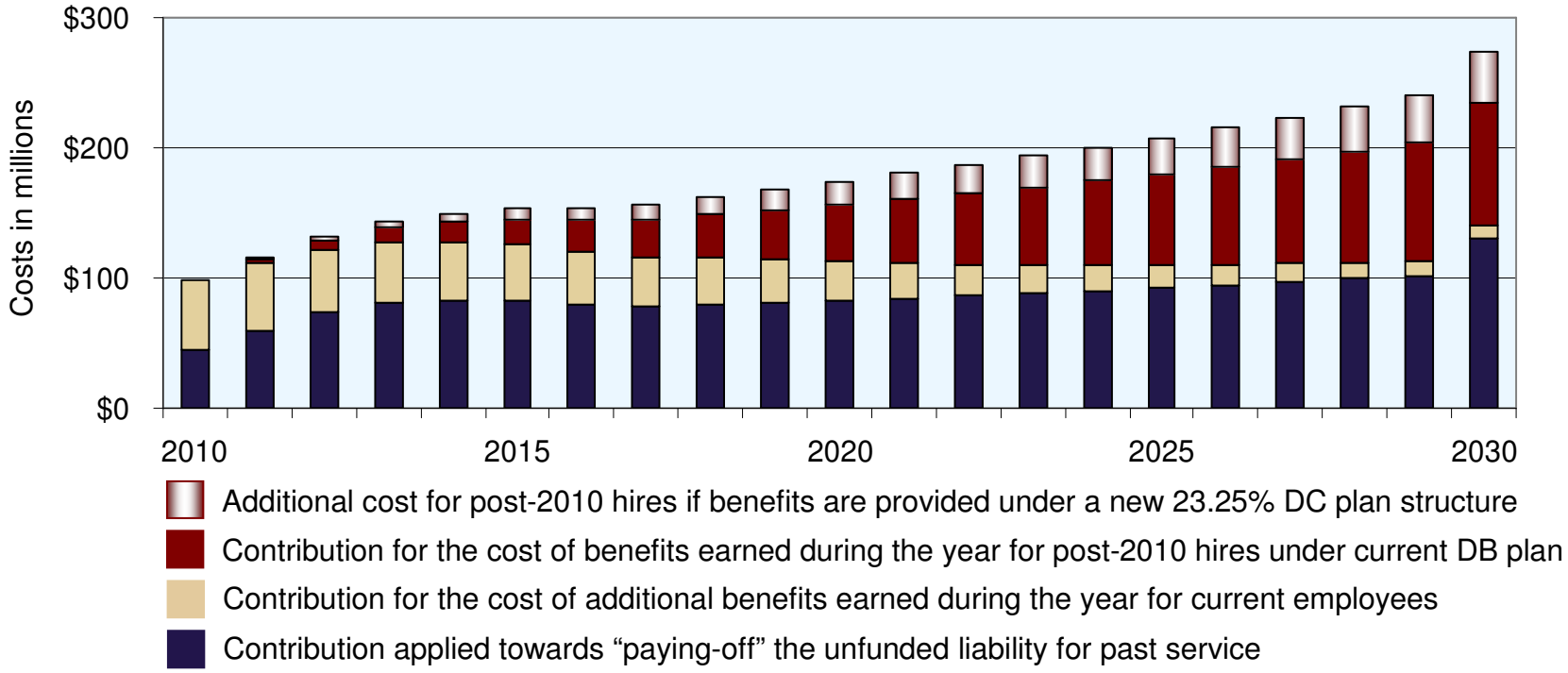
Age at Hire	Age at Retirement			
	55	60	62	65
20	83%	114%	130%	158%
25	65%	92%	105%	129%
30	50%	72%	83%	104%
35	37%	56%	65%	82%
40	26%	41%	49%	63%
45	16%	28%	35%	46%

Replacement Ratios Assume 6.00% Return on Investments Each Year

Note: Color coding indicates change in Replacement Ratio from current plan to DC alternative:

- Green indicates "winner" / increase in benefit
- Red indicates "loser" / decrease in benefit

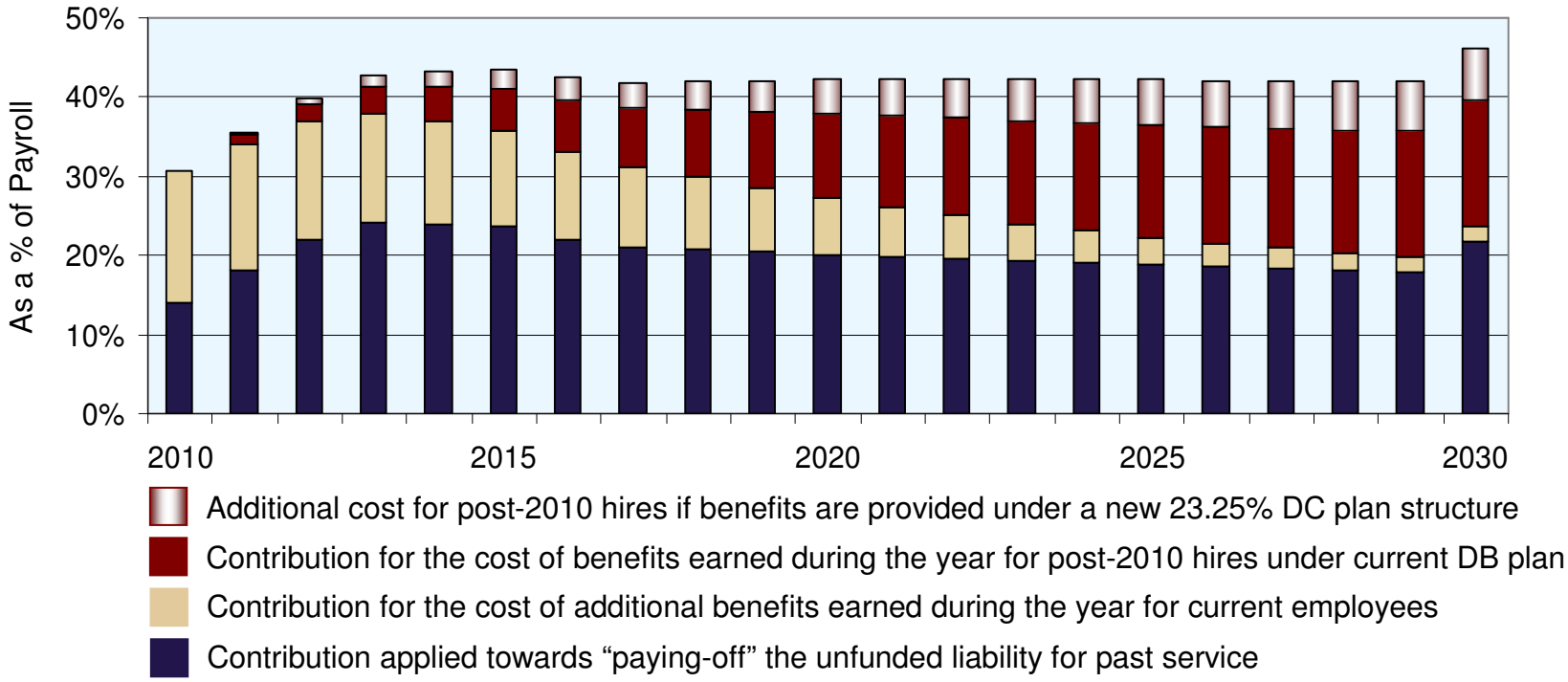
Projected Contribution Requirements for Pension



Comments

- Based on a valuation interest rate of 7.50%
- Assumes return on DB plan investments of 7.50% each year
- Annual amounts shown represent both employer and employee contributions
- Contributions are made each year equal to the minimum required amount

Projected Contribution Requirements for Pension



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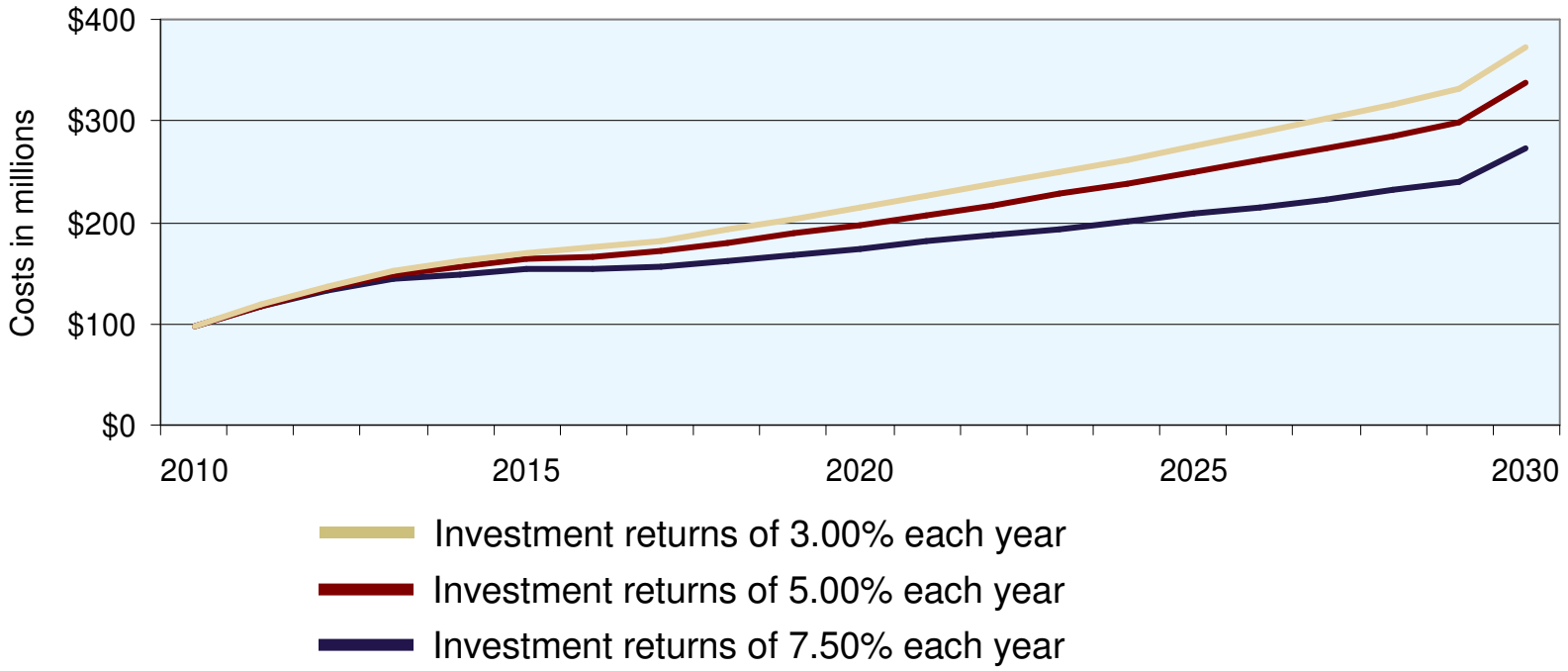
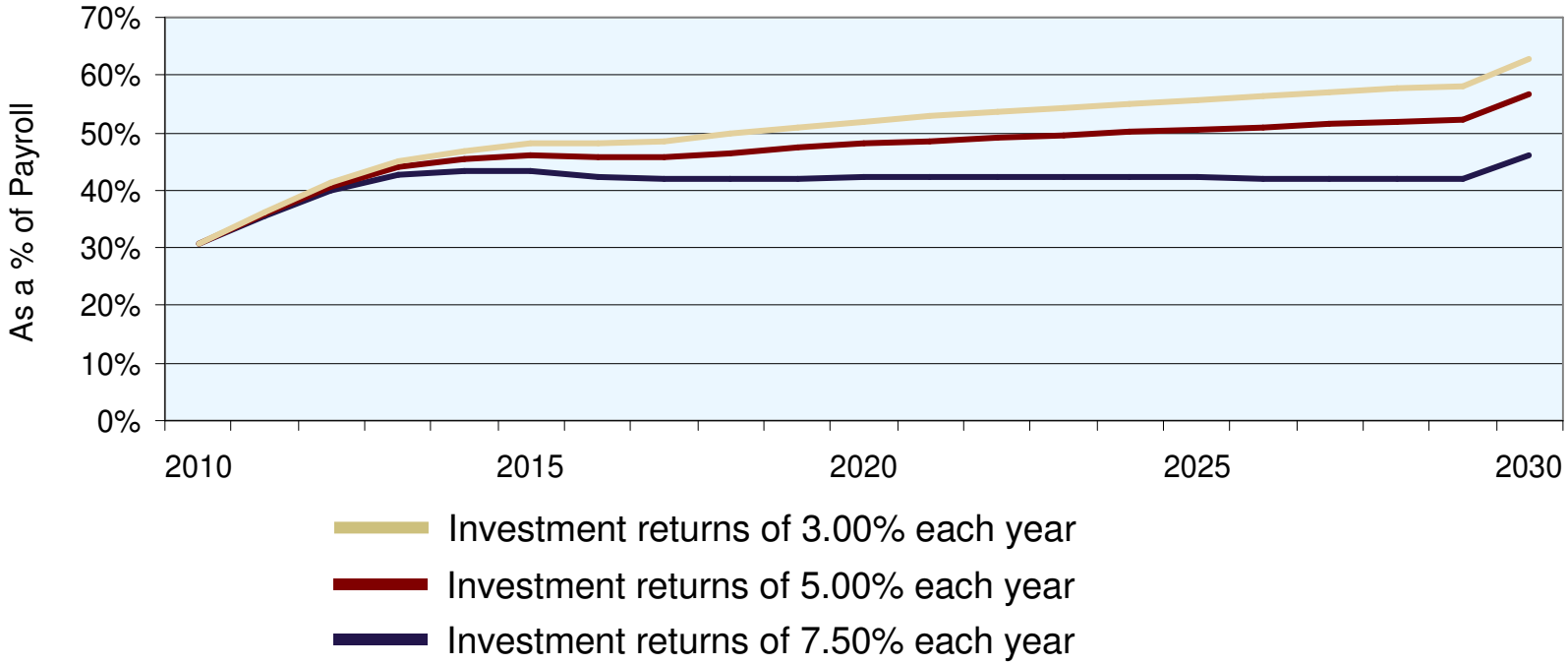
Projected Contribution Requirements for Pension



Comments

- Lines represent total costs of retirement program with 23.25% DC plan for post-2010 hires
- Based on a valuation interest rate of 7.50%
- Assumes return on DB plan investments as shown of 7.50%, 5.00% or 3.00%
- Annual amounts shown represent both employer and employee contributions
- Contributions are made each year equal to the minimum required amount

Projected Contribution Requirements for Pension



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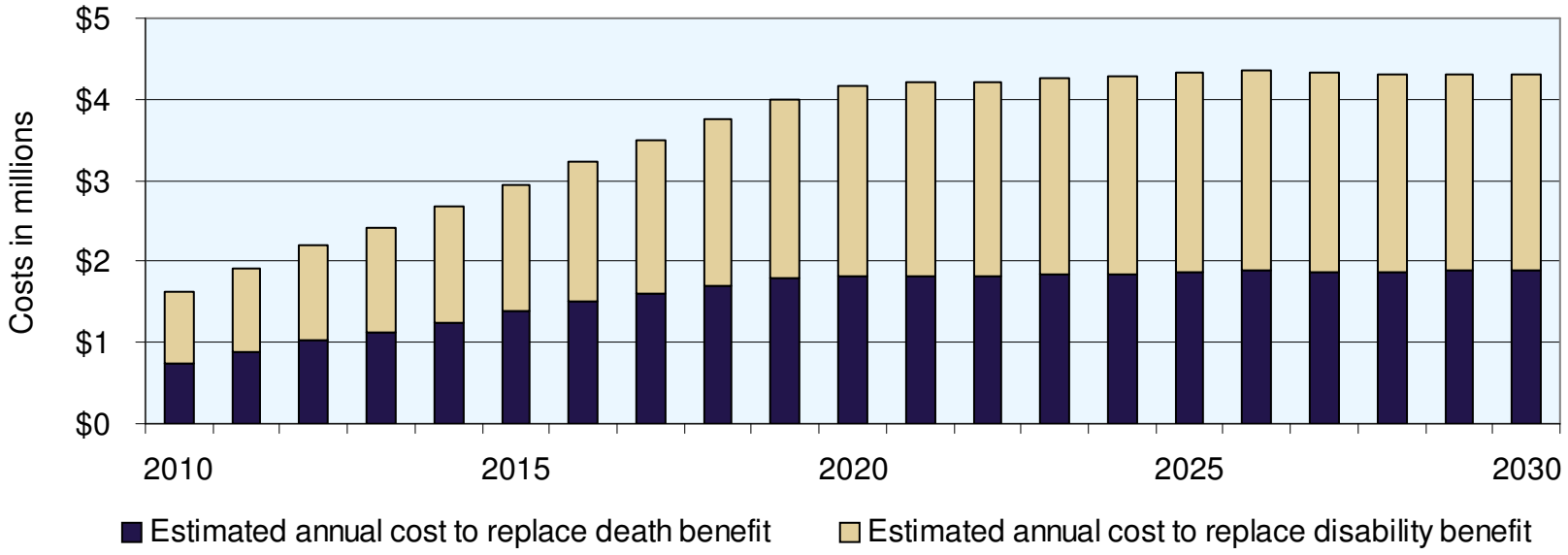
Projected Cost of Replacing Ancillary Benefits



Comments

- Cost of disability and in-service death coverage for post-2010 hires would rise rapidly over the years following implementation of DC coverage
- The value of these benefits would reach $75 million by 2030
- If funded through group insurance (which would eliminate risks for the state), the cost would be greater

Observations and Conclusions

- Providing a 23.25% DC plan for post-2010 hires increases the annual cost of providing benefits by 40%
- Some big losers and some big winners – benefits are distributed in entirely different manner
- Projected annual contribution requirements for unfunded liability
  - Assuming 7.50% asset returns, amortization payments range from high of $130 million (22% of payroll) to low of $45 million (14% of payroll) at end of the projection period
  - Amortization payments increase substantially if actual asset returns are lower
    - Assuming 5.00% returns, payments are as high as $193 million a year
    - Assuming 3.00% returns, payments are as high as $230 million a year
- Projected annual costs for benefits earned each year (normal costs)
  - Annual costs for existing employees decline from about $53 million (17% of payroll) currently to $10 million (2% of payroll) at end of projection period
  - Cost to provide benefits for post-2010 hires by the year 2030
    - Projected to exceed $134 million a year
    - As much as $38 million higher a year to provide through DC plan

Observations and Conclusions

- By the year 2030, about 50% of contributions to the retirement program are expected to be going into the DC plan
- Any COLAs would need to be provided outside of the retirement plan
- Cost of disability and in-service death coverage for post-2010 hires would rise rapidly over the years following implementation of DC coverage
  - The value of these benefits would reach $75 million by 2030
  - If funded through group insurance (which would eliminate risks for the state), the cost would be greater
- Significant underlying assumptions (which may or may not hold):
  - Ability of DC plan participants to achieve an 8% return on their funds
    - Historically, DC plan funds have earned lower returns than those held in DB plans.
    - Particularly difficult to attain such returns in the early years of the DC plan, when trust will be small
  - Ability of legacy DB plan to continue to achieve current assumed investment returns as it matures

Data, Assumptions, Methods and Plan Provisions

- Interest discount rate of 7.50% for all years
- Census data as of June 30, 2009
- Plan liabilities are determined using the entry age normal funding method
- Unless otherwise noted, asset returns are equal to 7.50% per year net of administrative expenses
  - Expenses for investment advisors equal to .20% of assets
  - Expenses increase by 2.00% per year
- 20% of investment returns are attributed to realized gains/losses
- Contributions to the plan are made by only the employer and employees
- All other assumptions, actuarial methods and plan provisions are as outlined in the 2009 valuation reports

Summary Observations

	LASERS	TRSL	STPOL	LSERS
Target hire / retire ages	25 / 60	25 / 60	25 / 55	35 / 60
RR at target hire / retire age	83%	85%	97%	80%
DC contribution rate	13.00%	13.25%	22.50%	23.25%
Change in annual cost from DB to DC in year 2030 for NEs				
• In dollars	+ $ 15 M	+ $ 28 M	- $ 2 M	+ $ 38 M
• As a % of total payroll	+ 0.3%	+ 0.4%	- 1.8%	+ 6.5%
Cost of in-service disability /death coverage				
• Cost in 2011	$ 15 M	$ 24 M	$ 1 M	$ 2 M
• Value by 2030	$ 550 M	$ 893 M	$ 17 M	$ 75 M

NEs = new entrants to the plan hired after July 1, 2010