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A Better Bang for the Buck–
The Economic Efficiencies of Defined Benefit Plans

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Presentation to Royal Statistical Society

March, 2013

A Better Bang for the Buck–
The Economic Efficiencies of Defined Benefit Plans

- Written in 2008 with Beth Almeida of National Institute on Retirement Security
- Widely cited in US
  - Has had some influence in US public pensions
- Today, I will review basic report
- Further potential research
- Critiques
- About NIRS

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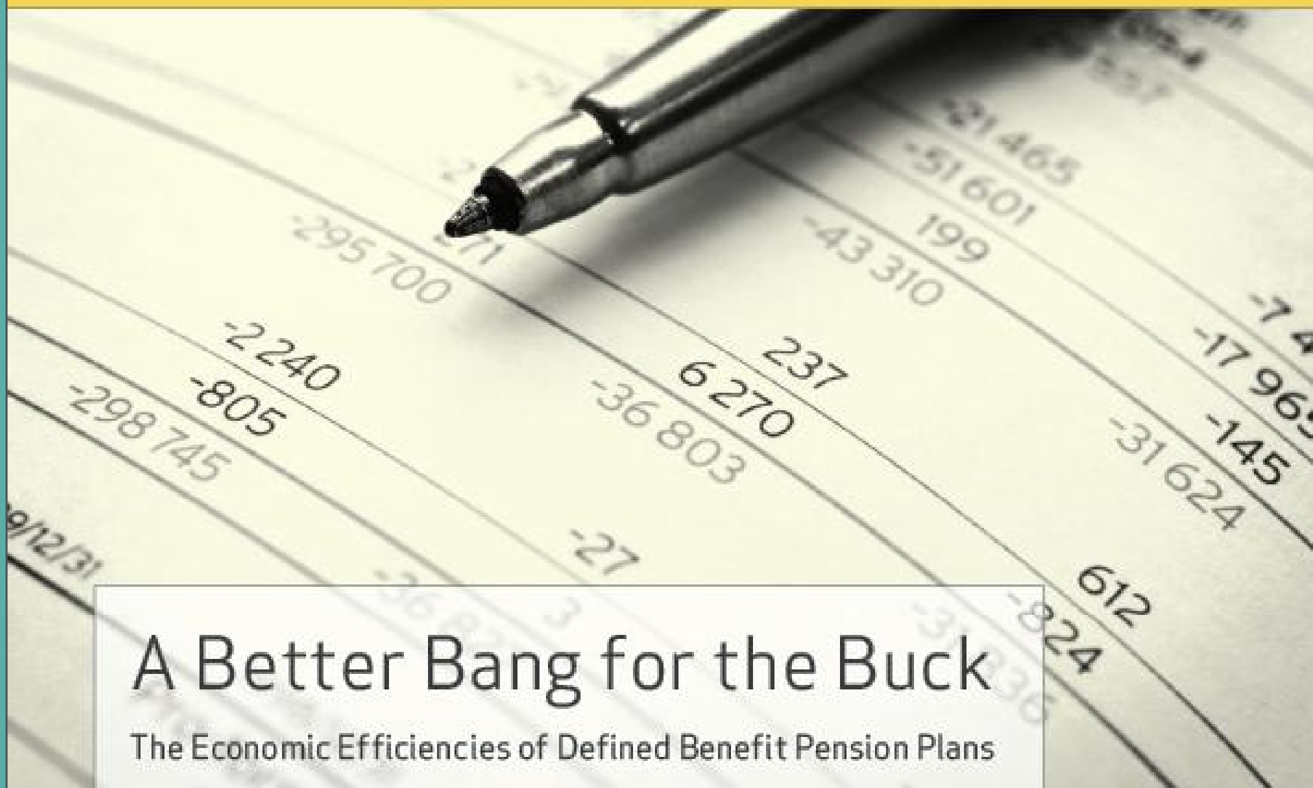

A Better Bang for the Buck

The Economic Efficiencies of Defined Benefit Pension Plans

by Beth Almeida and William B. Fornia, FSA

August 2008

You've Seen the Headlines …

USA TODAY

GM Will Freeze Salaried Pensions, Shift to 401(k)s
"move will save the struggling automaker $420 million in 2007."
April 10, 2007

The Washington Post

IBM Adds Its Name to the List of Firms Freezing Pensions
"cut worldwide retirement-related expenses by $450 million to $500 million this year."
January 6, 2006

The New York Times

Verizon to Halt Pension Outlay for Managers
"company hopes to save about $3 billion over the next decade"
December 6, 2005

But the Headlines Don't Tell the Whole Story

- Leave readers with the false impression that DC plans are somehow inherently less expensive than DB plans
- But benefit generosity largely drives retirement plan cost
- Naturally, less generous benefits will cost less

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Separating Benefit Generosity from Economic Efficiency

- “The level of contributions from both employers and employees into DC schemes is lower than it is into DB schemes. Whatever the arguments about the merits of [DC plans], if you put less money in, you will get less money out.

- “To make the shortfall worse, the costs of running DC schemes are, on average, higher,

- “and finally, DC pensions call for a degree of decision-making that their members are often ill-equipped to undertake.”

The Economist, June 12, 2008

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In Other Words …

- Benefit generosity is a different question than the economic efficiency of a retirement system
- A wide body of research indicates that DB plans contain “built-in” efficiencies that DC plans do not
- Such findings suggest that a DB plan will be able to deliver any given level of retirement income at a lower cost than a DC plan

Research Question: Why We Did this Study

- Evaluate claims that “DC plans save money”

- How do the costs of delivering retirement benefits through each type of plan compare?
  - Apples-to-apples comparison
  - Calculate the cost to deliver the same level of retirement benefits
    - DB plan
    - DC plan

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Results: What We Found

- The DB approach saves money compared to the DC approach. Three reasons …

1. DB pension plans pool “longevity risks”
2. DB pension plans can maintain a better diversified portfolio because, unlike individuals, they do not age
3. DB pension plans achieve better investment returns because of professional asset management and lower fees

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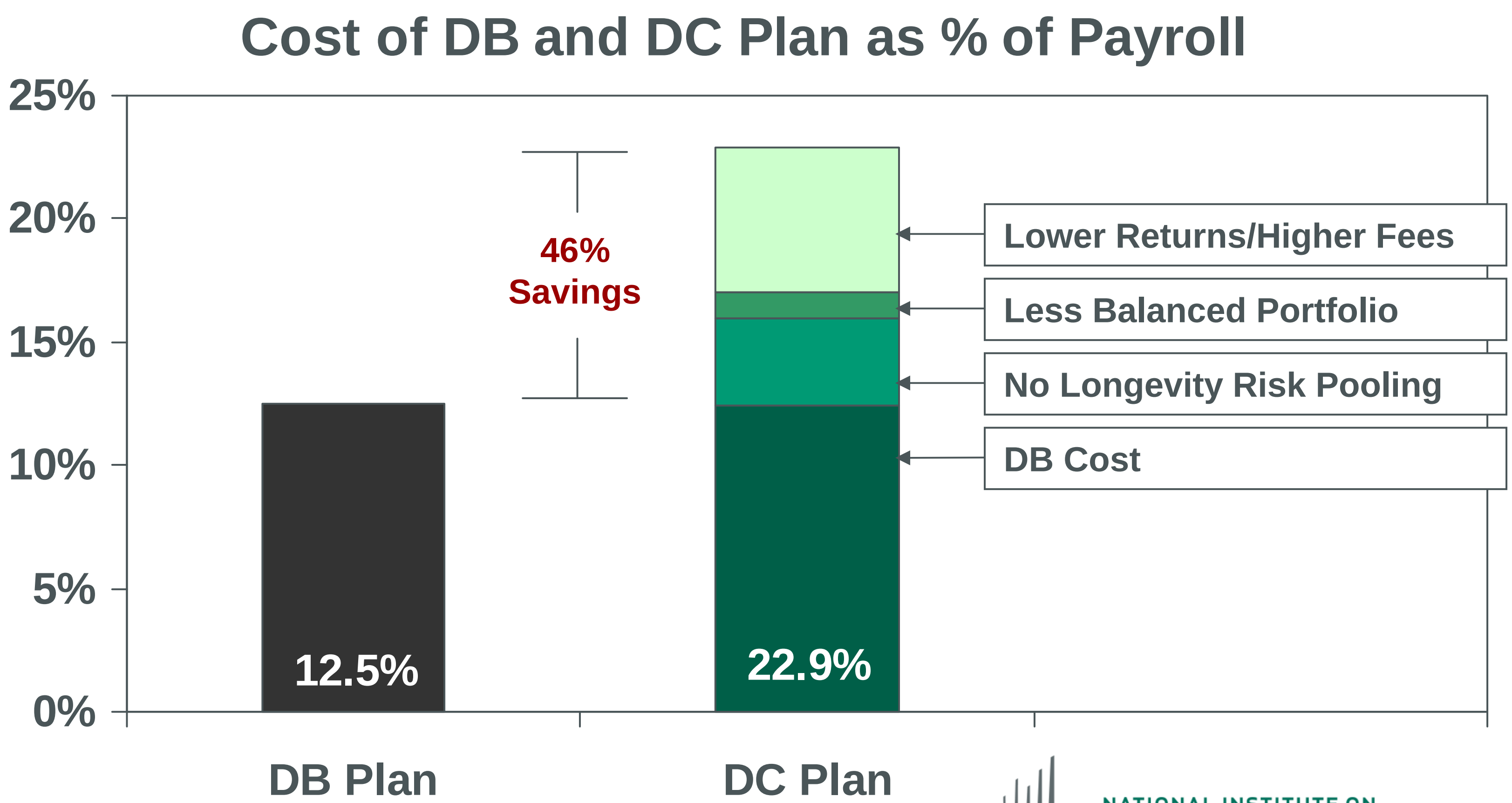
DB Plan Can Deliver Same Benefit at About Half the Cost of DC Plan



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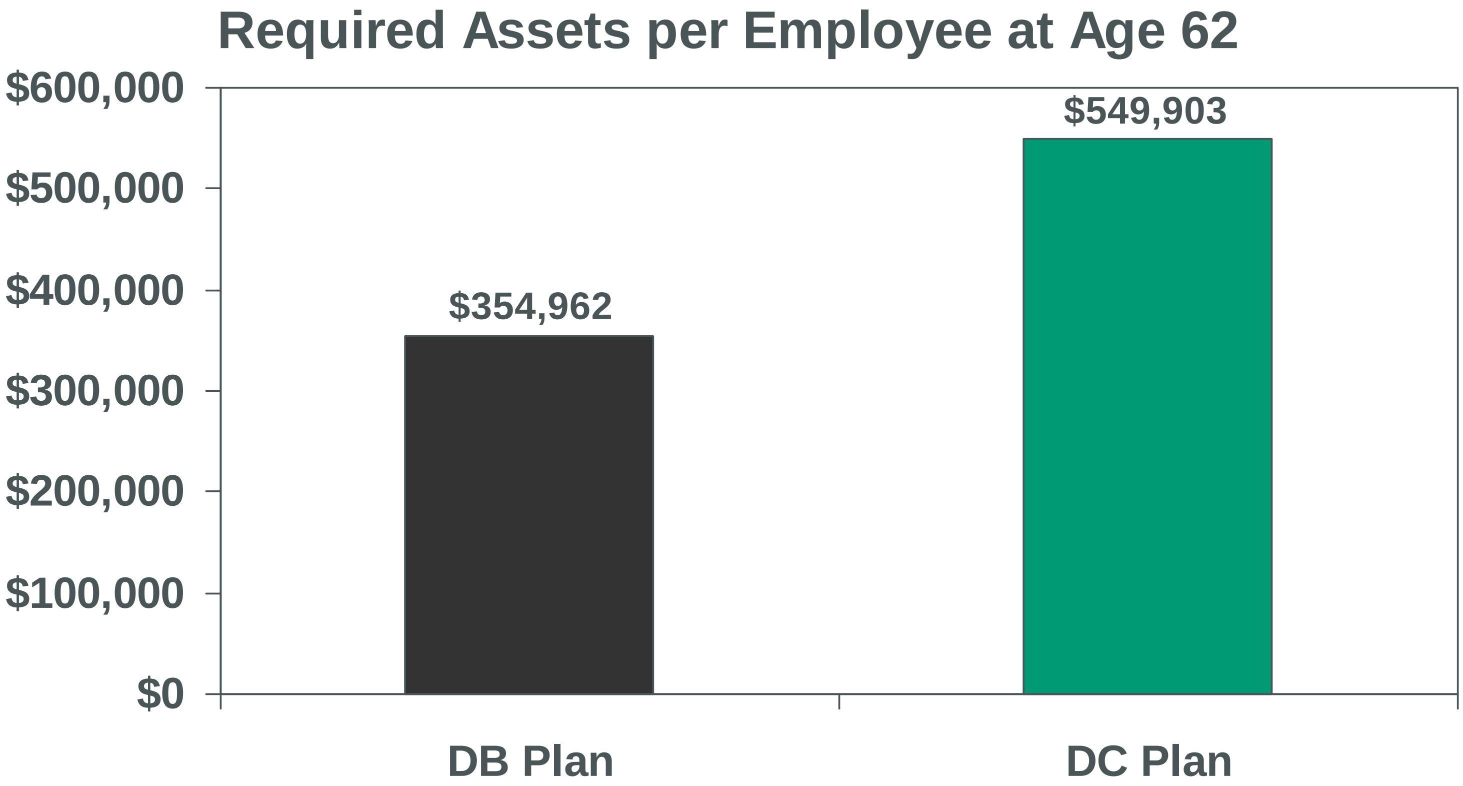
DB Plan Can Do More with Less



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Methodology: What We Did

- We model a population of 1,000 female teachers who work for 30 years - their final salary is $50,000

- We define a “target” retirement benefit - about $2,200/month – at age 62, which is adjusted for inflation

- We calculate the cost to fund this benefit through a DB plan structure, then through a DC plan structure

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DB Plan Payout for 1,000 Retirees

- Consider 1,000 retiring schoolteachers
- Retiring at age 62
- This illustration assumes they are female
- Some will live to over 100
- Some will die at 62
- On average they will live to 85

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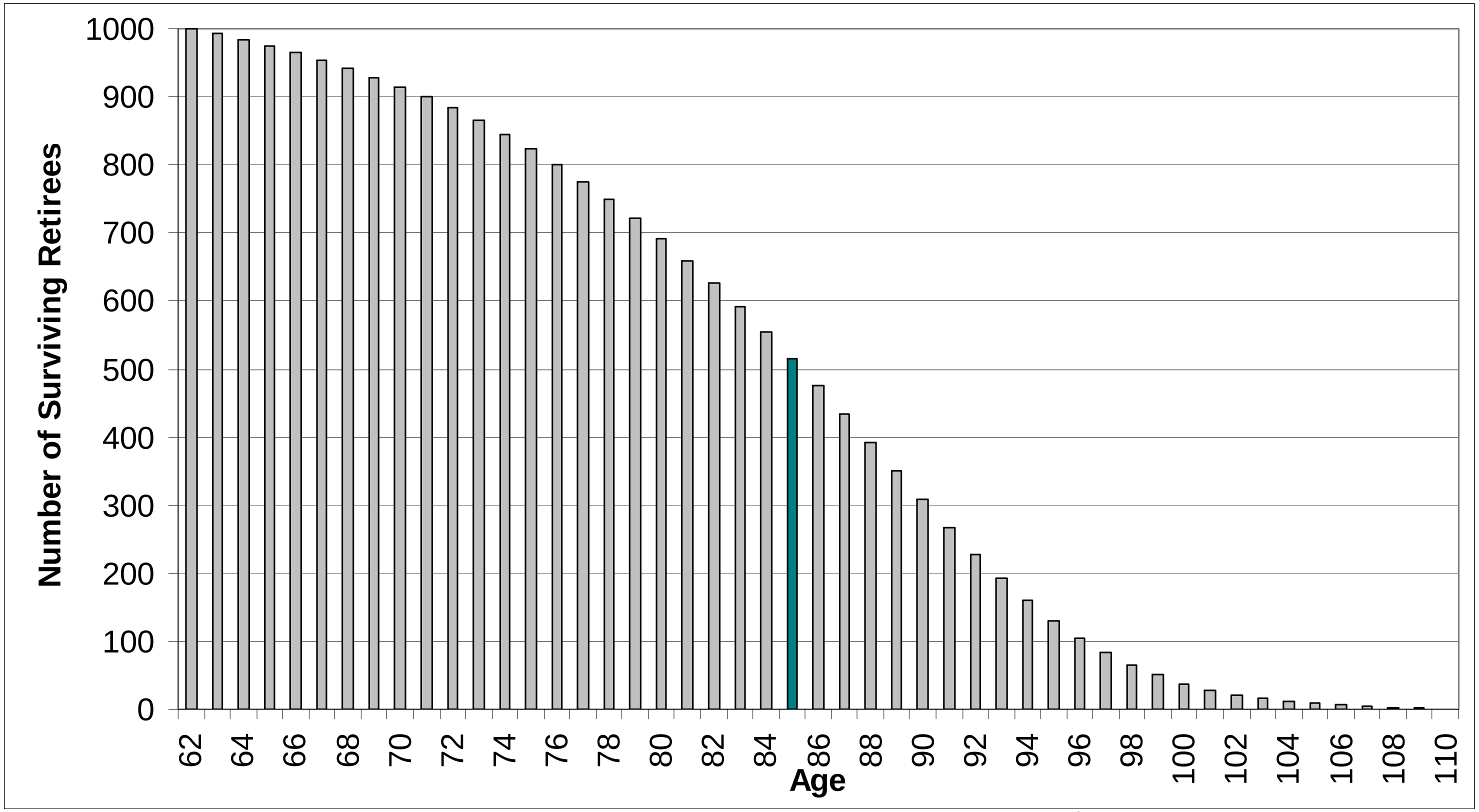
Longevity of 1,000 Female Retirees



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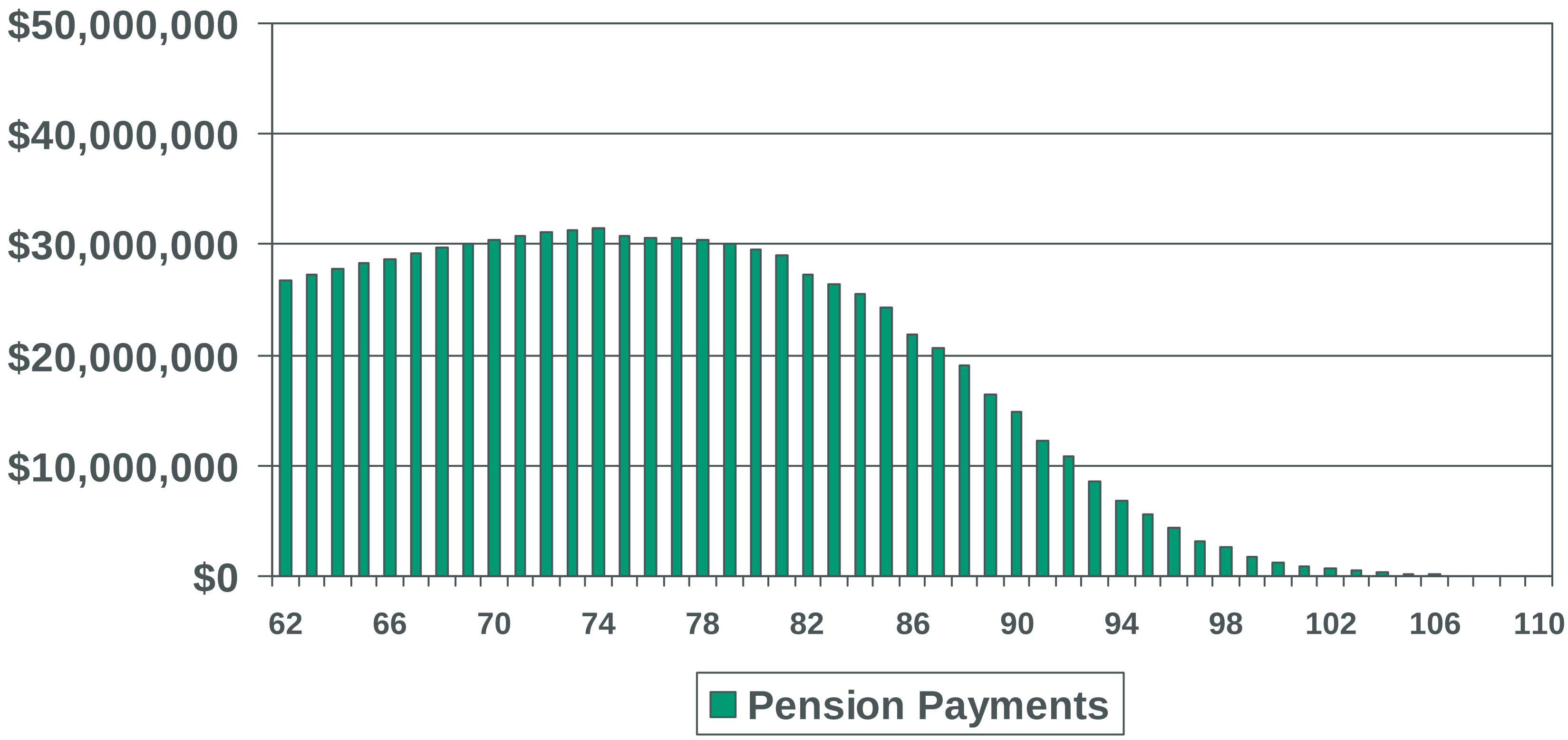
Annual Retirement Payments for 1,000 Teachers in DB Plan



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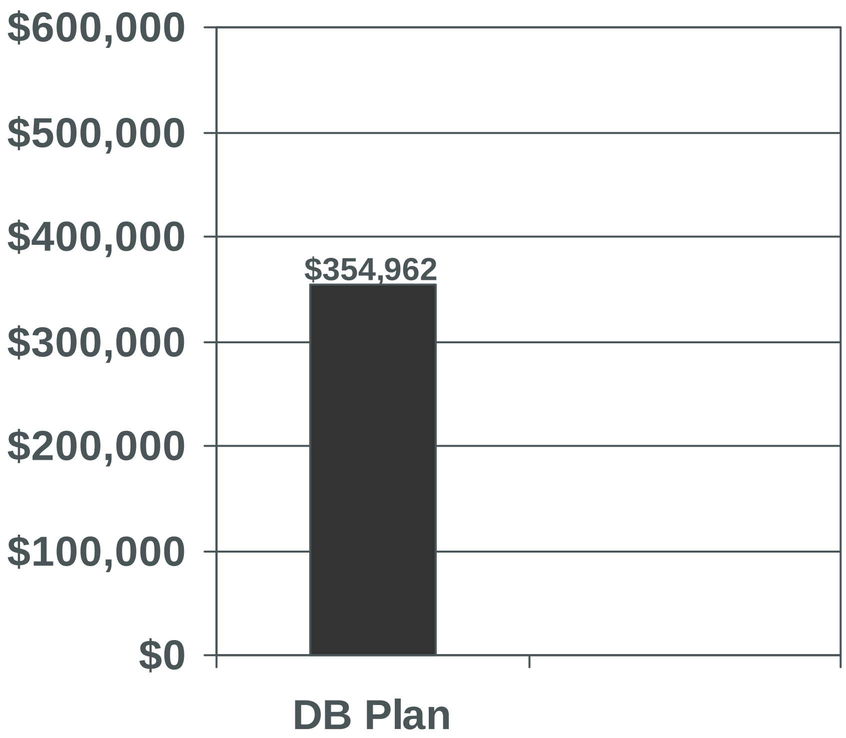
Amount needed at Age 62 to Fund Target Retirement Benefit



- The DB plan must have about $355,000 set aside for each person in the plan at age 62
- In order to fund this amount, contributions must be 12.5% of payroll each year

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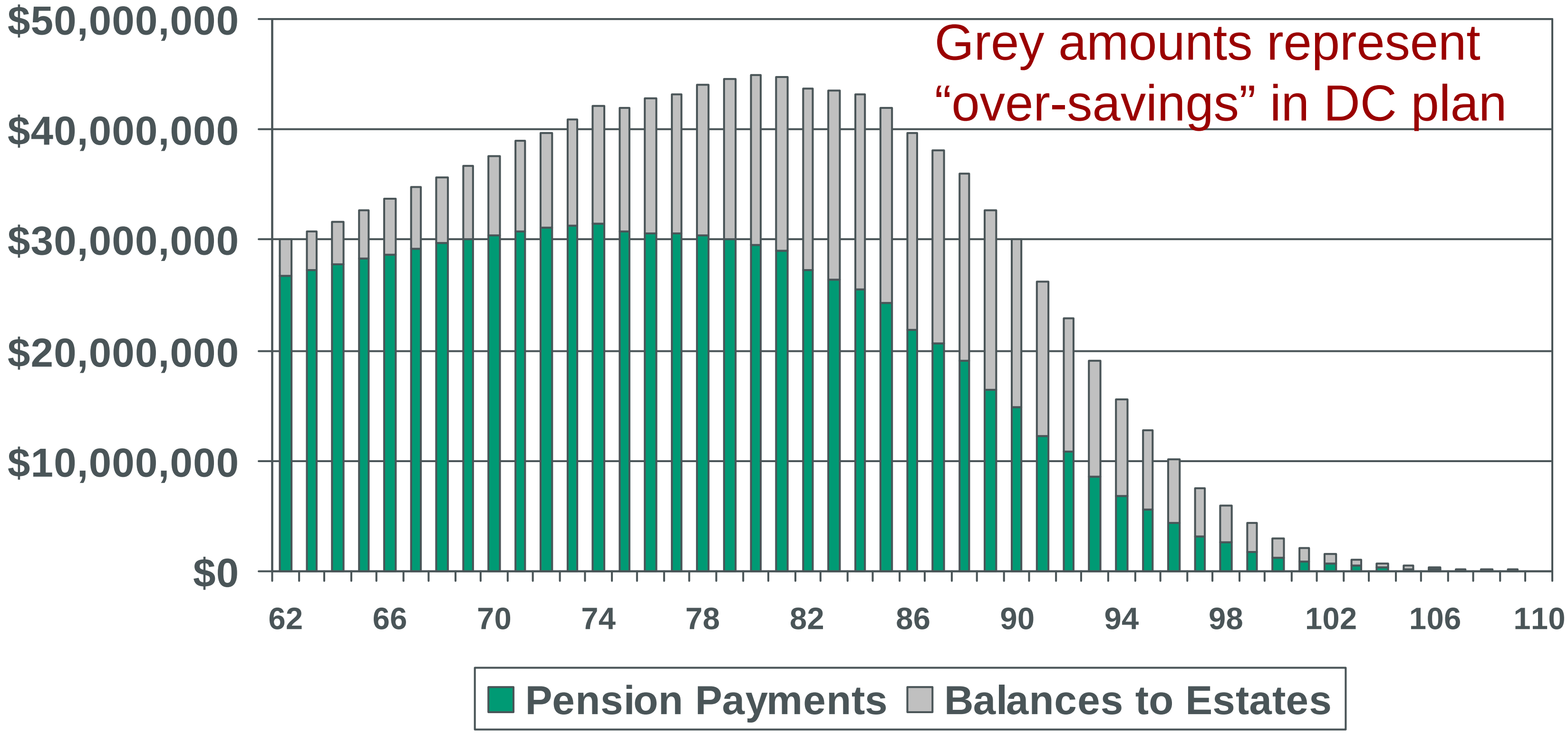
DC Plan Could Target the Same Payments …

- But individuals don't know how long they'd live
- Will want to save enough so they don't run out of money if they live longer than average
- Reasonable to target 90^{th} percentile life expectancy (for women age 62, this is age 97)
- This leads to the "oversaving dilemma"…

Under the DC Plan 24% of Assets Are Not Used for Retirement



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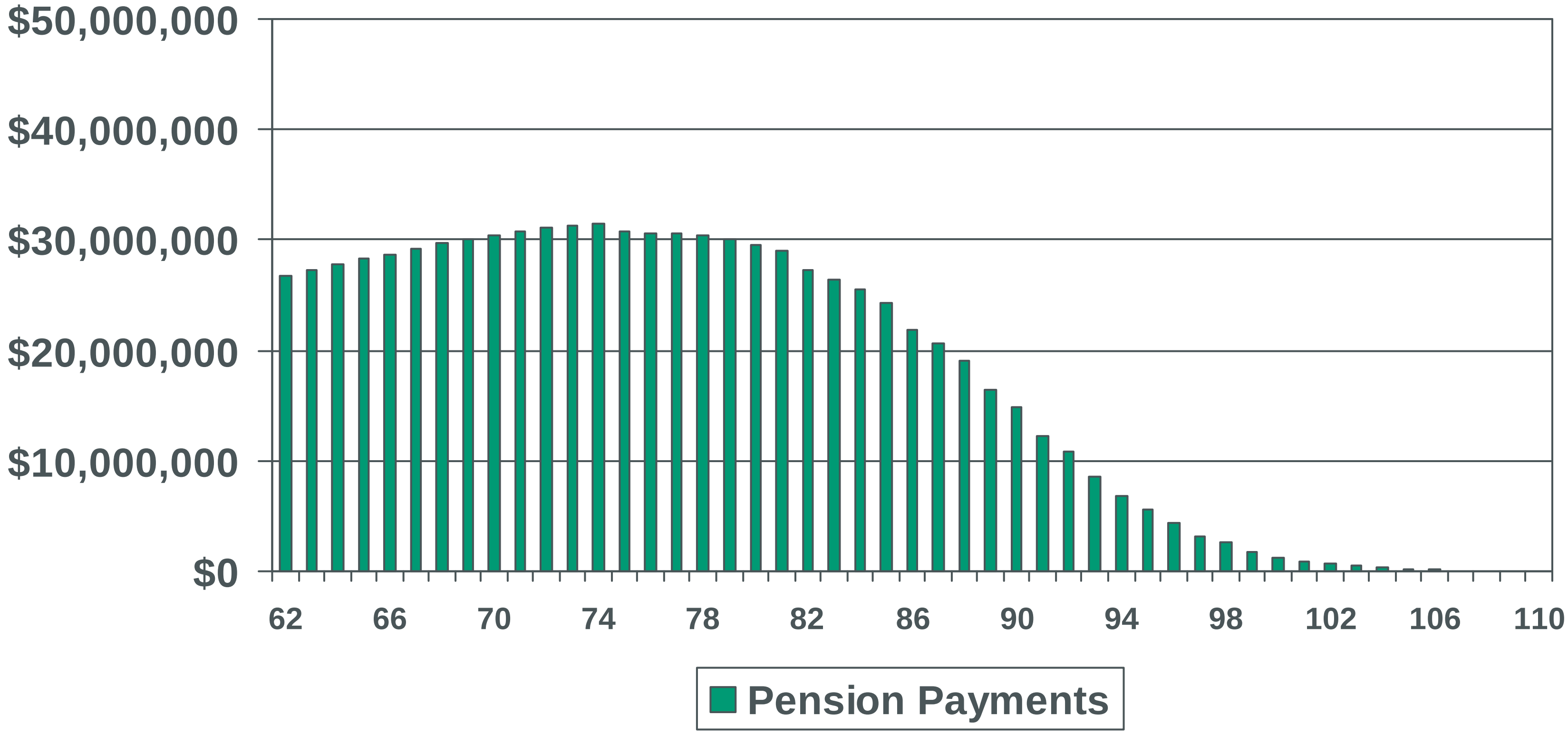

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1st Strength of DB Plans
Longevity Risk Pooling

- Because they cover large numbers of retirees, DB plans can pay out over the *average* life expectancy, not *maximum* life expectancy

- An individual under a DC plan will want to avoid the risk of running out of money if they live a long life

- Because individuals must plan for a maximum life expectancy, much more money must be accumulated in a DC plan, compared to a DB plan

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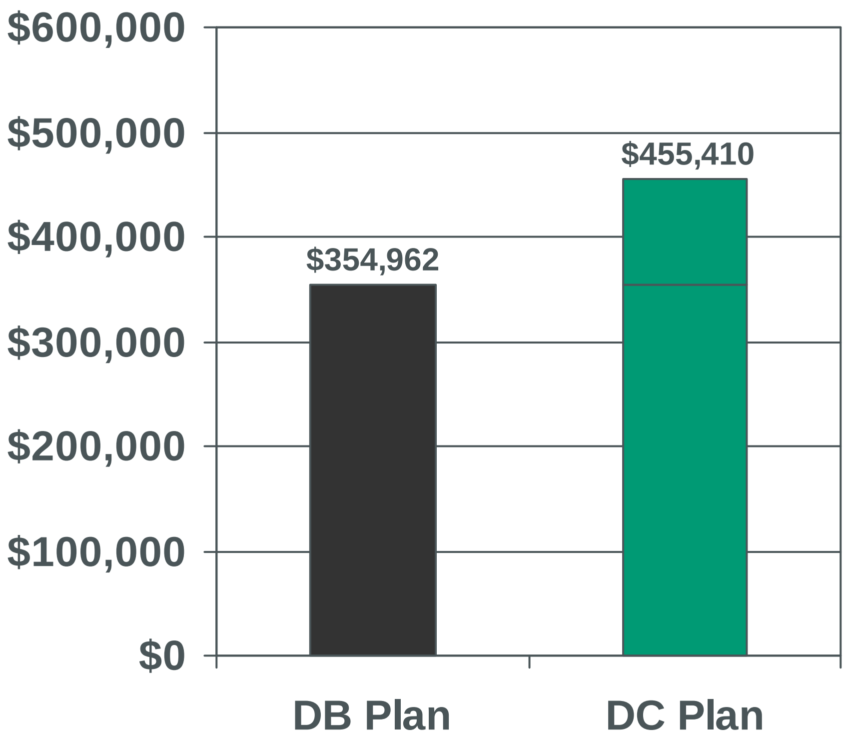
Lack of Longevity Risk Pooling in DC Plans Drives Up Cost



- Individuals must self-insure longevity risks ("over-save") thus, the DC plan needs to set aside at least $455,000 for each retiree at age 62
- In order to fund this amount, contributions must be **16.0%** of payroll

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Key Differences in How Investing Occurs in DB Plans vs DC Plans

- In DB plans, a common trust is established and assets are invested by professionals

- In DC plans, individuals typically direct their own investments
  - Age-related move to “safer,” but lower-yielding investments as individuals age
  - Individuals generally achieve lower returns as compared with professionals

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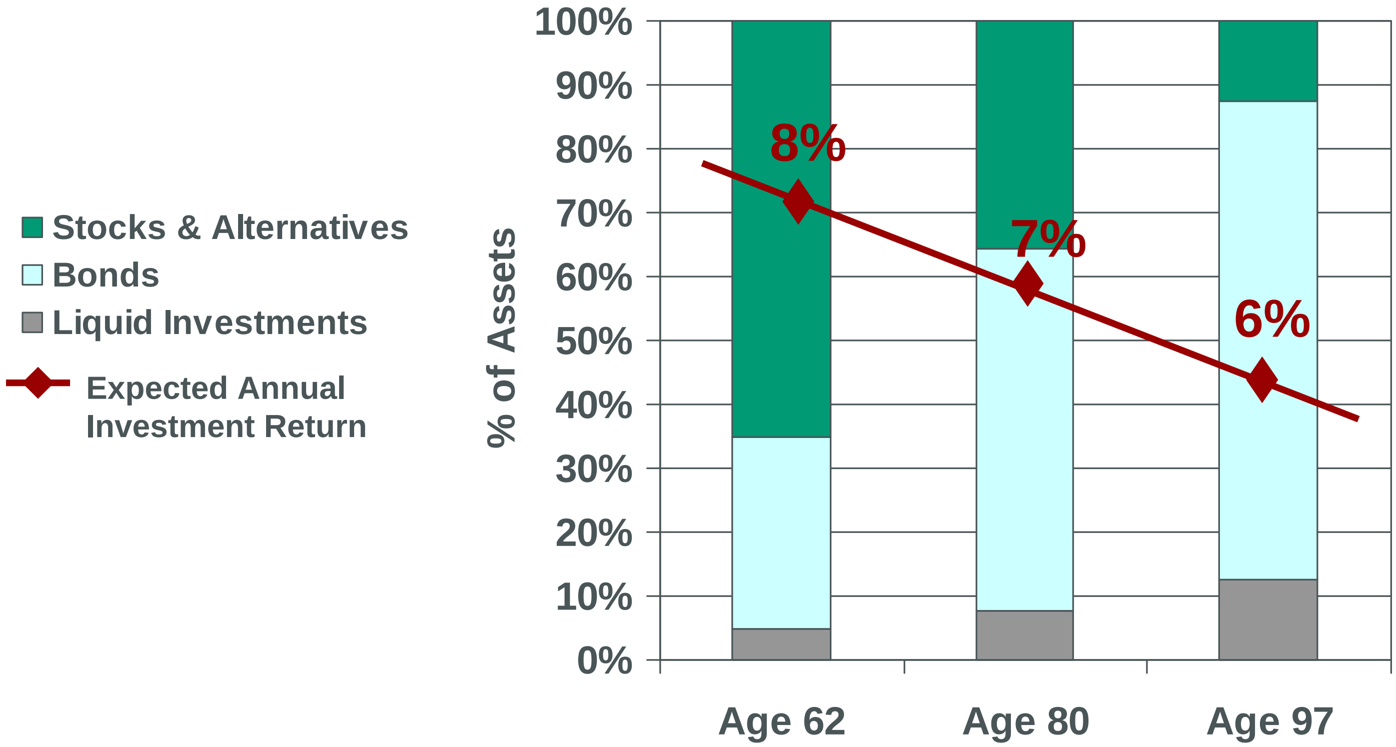
As Individuals Shift DC Portfolio Allocation, Expected Return Reduced



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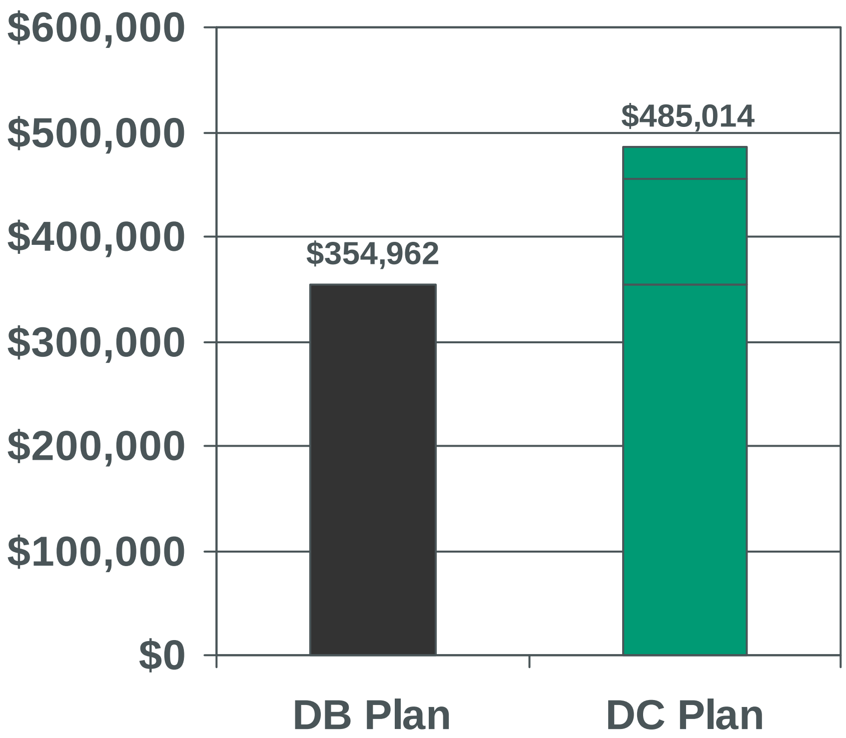
2nd Strength of DB Pension Plans
More Effective Portfolio Diversification

- DB plans can maintain a well diversified portfolio over time – unlike individuals, DB plans do not age
- To protect against market shocks, individuals in DC plans are advised to shift toward more conservative investments as they age, sacrificing some expected return
- Lower returns mean more money must be contributed to deliver the same level of benefits

Age-Driven Shift to a Less Diversified Portfolio in DC Plans Drives Up Cost



- The DC plan now must have at least $485,000 set aside for each retiree at age 62
- In order to fund this amount, contributions must be **17.0%** of payroll

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3rd Strength of DB Pension Plans Pooled, Professionally-Managed Assets

- Assets in DB plans are professionally managed. Despite their best efforts, individuals tend to under-perform when it comes to investing in DC plans

- Pooled investments in DB plans can lower expenses
  - Large group pricing negotiation
  - Avoid expenses of individual recordkeeping, investment education, investment transactions

- Studies generally have shown that DB plan returns outperform DC plans by at least 1% annually

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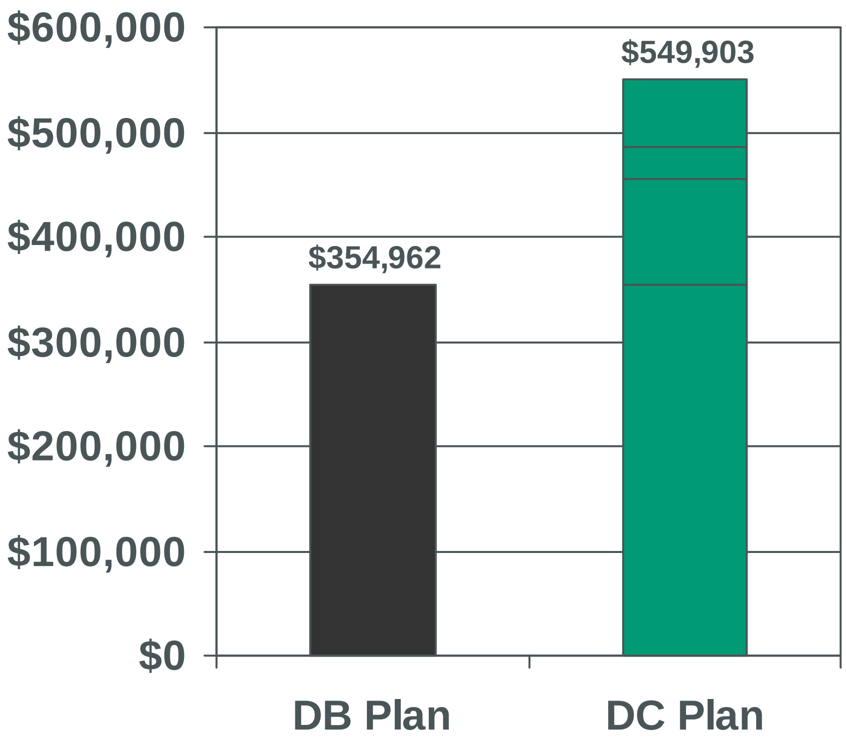
Lower Returns/Higher Fees in DC Plans Drive Up Cost



- The DC plan now must have almost $550,000 set aside for each retiree at age 62
- In order to fund this amount, contributions must be **22.9%** of payroll

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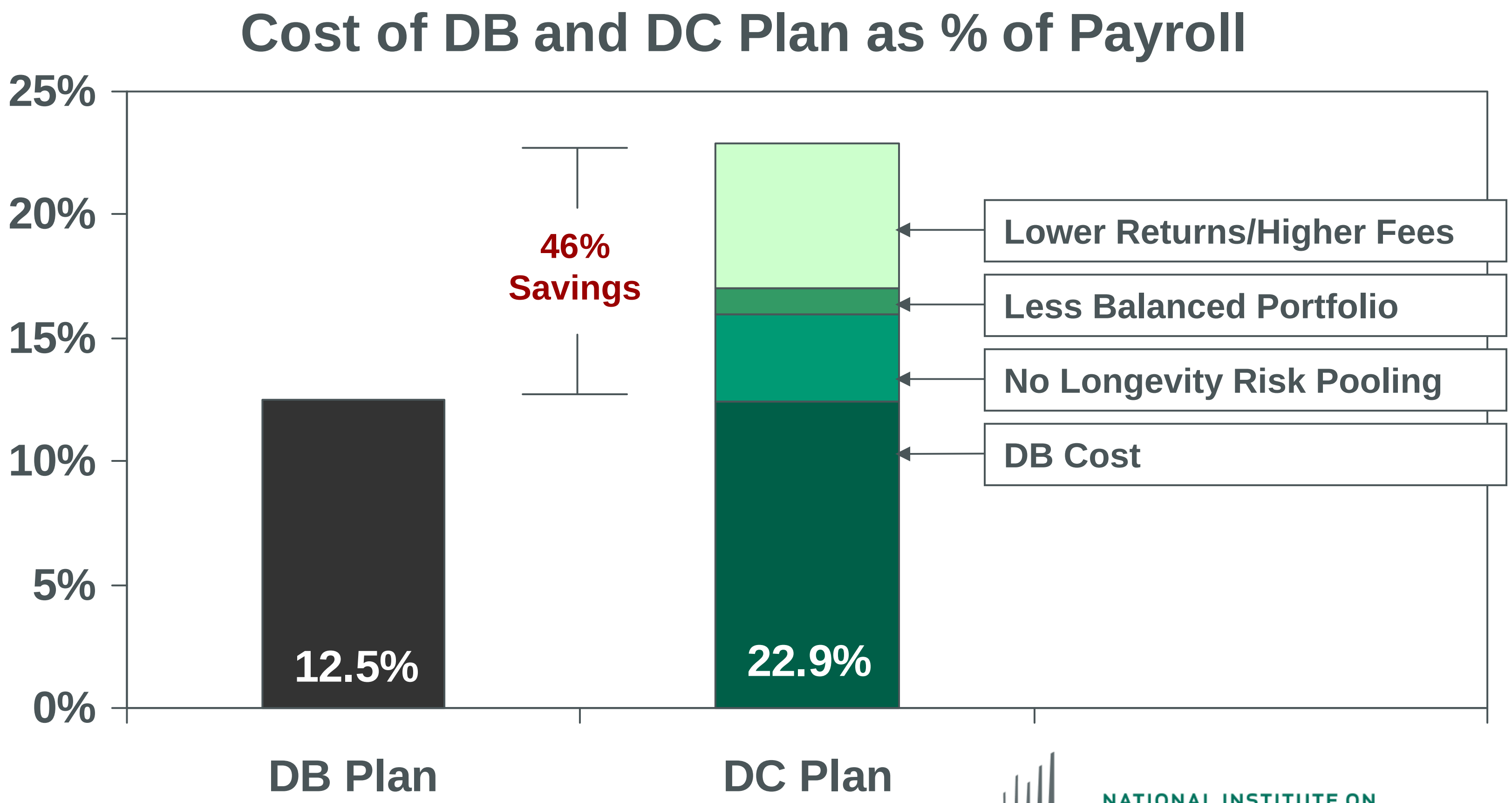
Cost of DB Plan is Almost Half the Cost of DC Plan



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Breakdown of DB Cost Savings

All-in costs savings in DB plans ………………….	**46%**
1. Longevity risk pooling saves ………………………	15%
2. Maintenance of portfolio diversification saves …	5%
3. Superior investment returns save …………………	26%

Because of these efficiencies, the DB plan can provide the same benefit at about half the cost of the DC plan

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Conclusions

- It’s important to separate the question of benefit generosity from the issue of retirement system efficiency
- DB plans have built-in economic efficiencies – provide a “better bang for the buck” for taxpayers/employees
- Decision makers should continue to carefully evaluate claims that “DC plans will save money”

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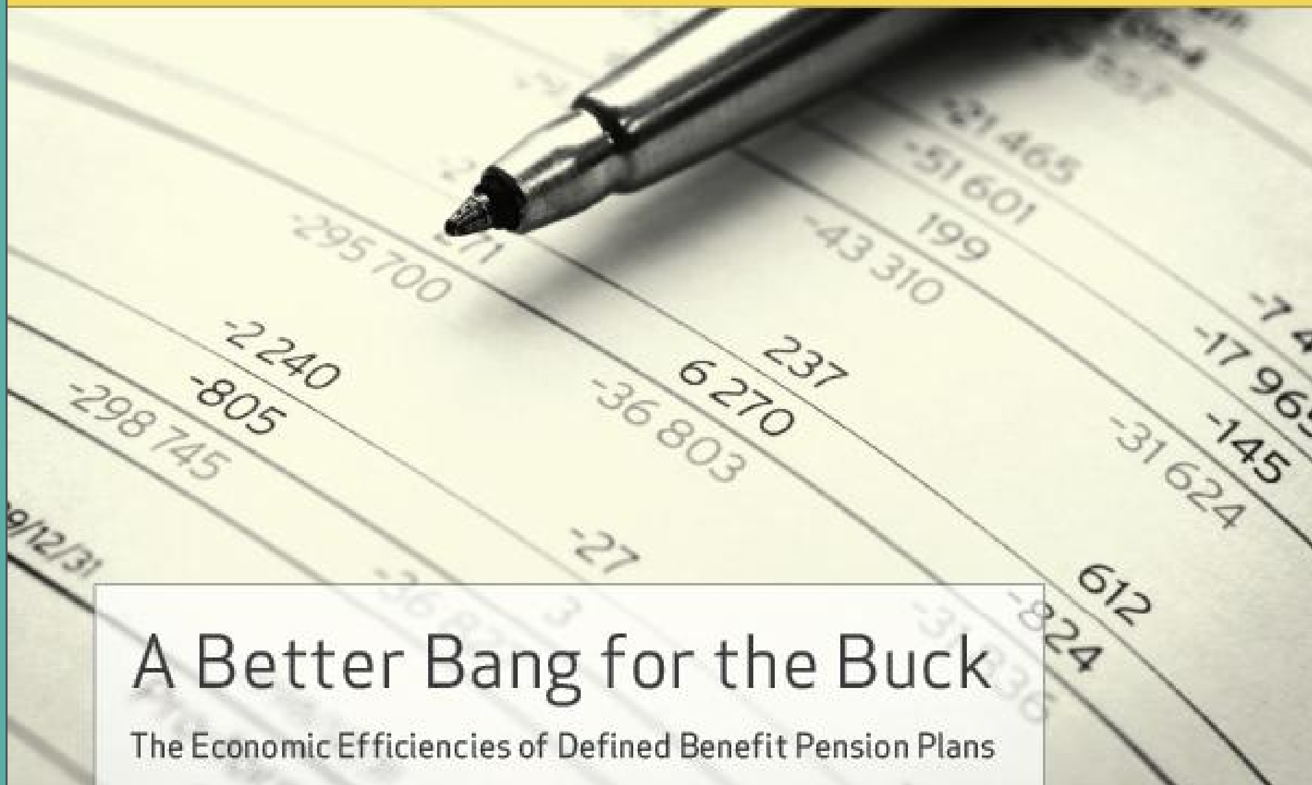

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Activity since 2008 publication

- Has been cited regularly, including in NIRS congressional testimony
- Various studies continue to find investment return differential between DB and DC
  - Often in excess of 1% assumed in "Bang"
- Much research has been conducted on payout phase of DC plans
  - Much more sophisticated than simple "Bang" approach
- Critiques
- About NIRS

Critiques of "Bang"

- Ignores risk to plan sponsor
  - Yes, but this risk avoidance is exactly what creates much of the excess value to DB over DC
  - Longevity risk is manageable among large group
  - Investment risk is much more problematic, particularly in short run
- Ambachtsheer Letter
  - DC plans are inevitable
  - Return differential is due to asset allocation
  - "Dark side" of DB

National Institute on Retirement Security

- US Non-profit research, educational and outreach organization
- Established to contribute to informed policymaking
- By fostering a deep understanding of the value of retirement security to
  - Employees
  - Employers
  - The economy as a whole

NIRS Research

- The Pension Factor: The Role of Pensions in Reducing Elder Economic Hardships
- Pensionomics: Measuring the Economic Impact of DB Pension Expenditures
- Lessons from Well-Funded Public Pensions: An Analysis of Plans that Weathered the Financial Storm
- Pensions and Retirement Security: A Roadmap for Policymakers
- Raising the Bar: Policy Solutions for Improving Retirement Security
- Out of Balance? Comparing Public and Private Sector Compensation Over 20 Years
- In it for the Long Haul: The Investment Behavior of Public Pensions
- The New Intersection on the Road to Retirement

For more information

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