May 2019

Public Retirement Plan Analysis

Public DC Trends & Market Environment Influencing DC

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Public Retirement Plan Analysis

Defined Benefit (DB) vs. Defined Contribution (DC)

	Defined Benefit Plan *(Traditional Pension)*	**Defined Contribution Plan** *(such as 401(k), 403(b), 457)*
CONTRIBUTIONS	In the public and private sectors, contributions are made on behalf of each employee by the employer.	Employees make their own contributions to their savings account at whatever rate they choose.
	In the public sector, many pensions are "contributory," meaning that employees also contribute to the plan out of their own paychecks.	In the private sector, employers will often make a certain match — for example, 50 cents on the dollar up to 6% of pay — but they are not required to contribute. In the public sector, employers that offer a choice between DB and DC often contribute the same amount to the DC accounts as to DB accruals.
INVESTMENTS	Contributions for all employees are pooled, and invested by professional asset managers in a diversified portfolio of assets — stocks, bonds, real estate, etc.	Investment portfolios consist of individual accounts for each employee. Employees make all investment decisions themselves, and can choose from a range of investment options offered.
AMOUNT OF MONEY IN RETIREMENT	The monthly benefit is determined by a set calculation, usually based on years of service and pay at the end of one's career.	The money available in retirement is the amount that one has accumulated in the savings plan, through contributions and investment earnings.
LIFETIME INCOME	Payouts are provided as a monthly income stream that is guaranteed for the remainder of the retiree's life.	Plans are not required to offer a lifetime income option, and often pay out benefits as a one-time lump sum.
SUPPLEMENTAL BENEFITS	Spousal protections, disability benefits, and cost of living adjustments are common.	Supplemental benefits are not applicable, and generally not available. If provided, they require extra contributions to some structure outside the DC plan.

Source: *Decisions, Decisions: Retirement Plan Choices for Public Employees and Employers* by Mark Olleman, FSA, MAAA, EA, and Ilana Boivie, September 2011

Public Retirement Plan Analysis
DC Plan Types – Private vs. Public

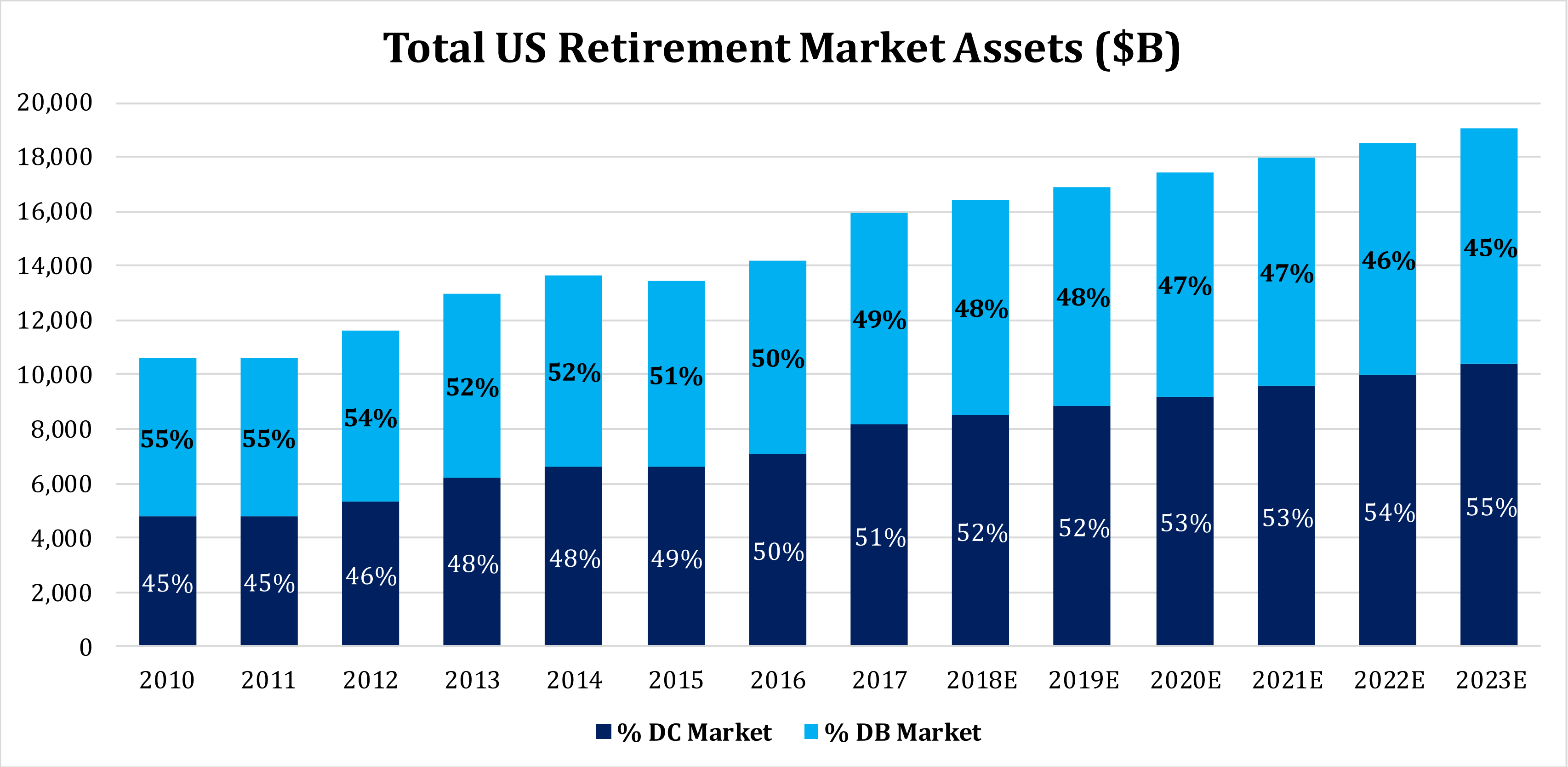
Employer Type	DC Account Type(s)	Investment Vehicles Available
Private DC Plans		
Corporations	• 401(k)	• MF, CIT, SA
Public DC Plans		
Federal Employees / Members of the Uniformed Services	• Federal Thrift	• Index funds managed by BlackRock
State Government Employees	• 457(b) • 457(f) • 401(a)	• MF, CIT, SA • MF, SA • MF, CIT, SA
State Teachers / Public Educational Institutions	• 403(b) • 401(a)	• MF, SA • MF, CIT, SA
Fire & Police	• 457(b) • 457(f) • 401(a)	• MF, CIT, SA • MF, SA • MF, CIT, SA
Local Government Employees	• 457(b) • 457(f) • 401(a)	• MF, CIT, SA • MF, SA • MF, CIT, SA

Vehicle availability dependent on plan eligibility and plan requirements regarding unitization.

Note: After May 6, 1986, state and local governments are not eligible to adopt Section 401(k) plans except for rural cooperatives and Indian tribal entities. Under grandfather provisions, plans established prior to that date may continue to operate and add new participants.

Source: www.irs.gov, www.tsp.gov, Retirement Plan Advisors, The Coalition of Collective Investment Trusts

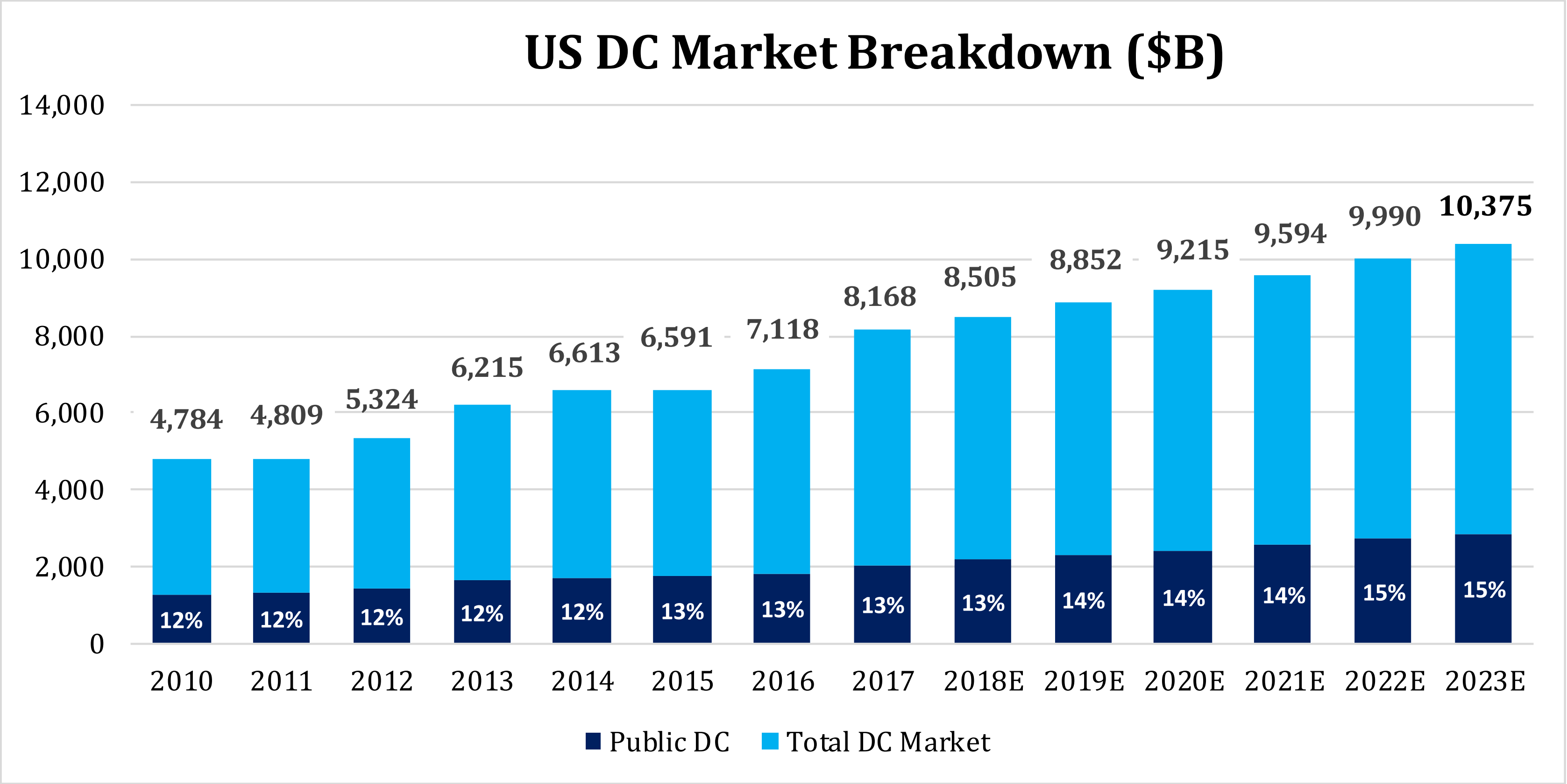
Public Retirement Plan Analysis
Total US Retirement Market Assets - DB/DC Breakdown



DC Segment expected to grow to 55%

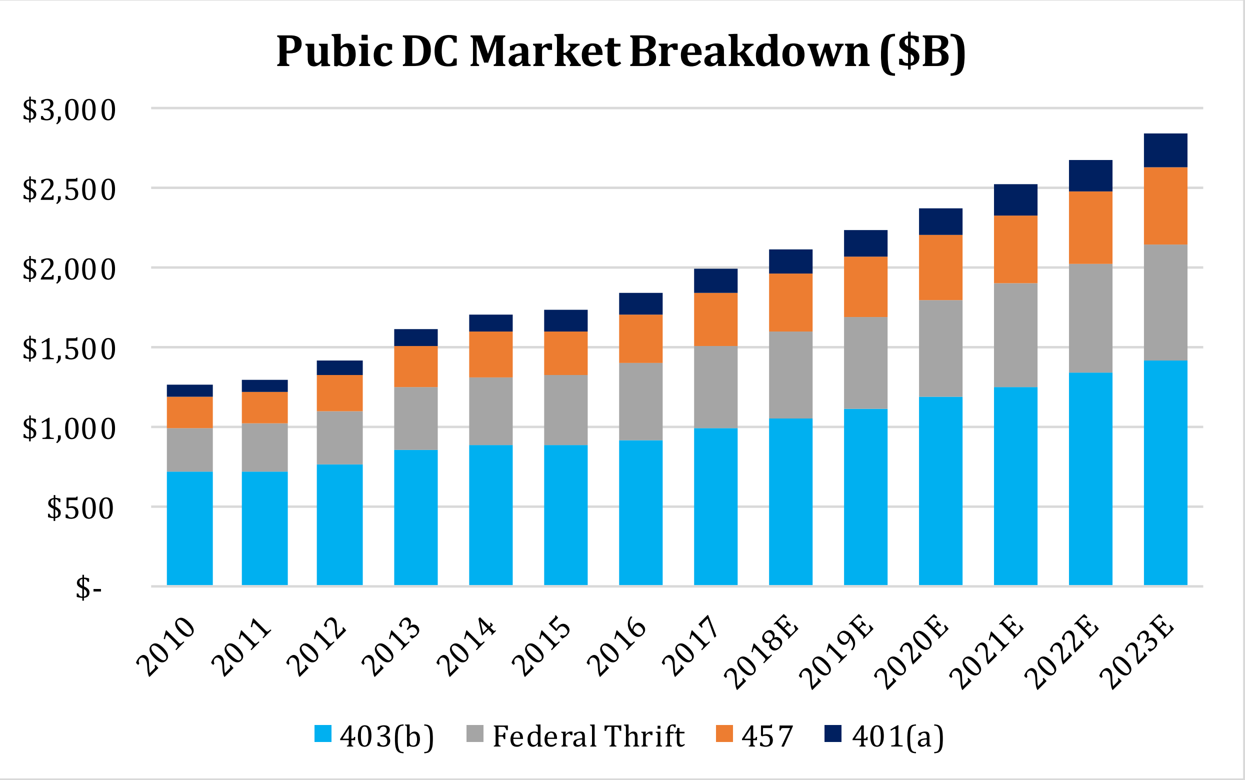
Public Retirement Plan Analysis

Total DC Assets and % Public



Source: Cerulli

Public Retirement Plan Analysis
Public DC Segmentation



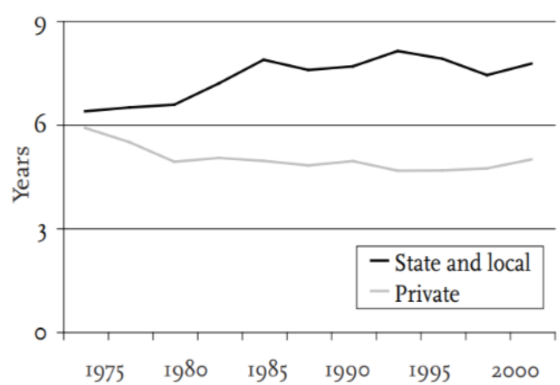
	2017	2023E
403(b)	50%	50%
Federal Thrift	26%	25%
457	17%	17%
401(a)	7%	8%
	100%	100%

Source: Cerulli

Public Retirement Plan Analysis
The Public Employee

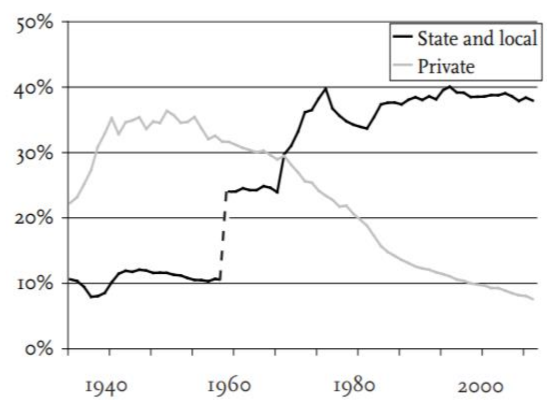
- Average job loss rate is lower in the public sector
- State and local workers tend to remain with their employer longer
- Private sector workers have become more mobile over time, while the median years of tenure of the public sector workforce have actually **increased** over the past 30 years

FIGURE 2. MEDIAN YEARS OF TENURE OF WAGE AND SALARY WORKERS AGES 25-64, BY SECTOR, 1973-2004



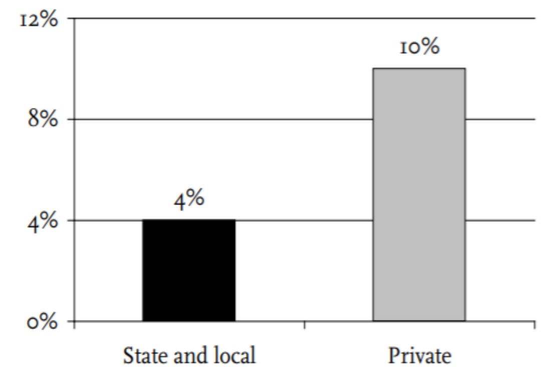
Note: The median tenure shown for state and local workers prior to 1983 is all government workers.
Source: Authors' calculations from the U.S. Census Bureau, *Current Population Survey* (CPS), 1973-2004.

FIGURE 5. PERCENT IN UNIONS, WAGE AND SALARY WORKERS AGES 25-64, BY SECTOR, 1939-2006



Note: The percent in unions shown for state and local workers prior to 1962 includes federal workers. The jump in union membership between 1961 and 1962 is due to the inclusion of associations, such as the National Education Association, which were previously excluded.
Sources: Troy and Sheflin (1985); U.S. Department of Labor (1939-1983); and Hirsch and Macpherson (2007).

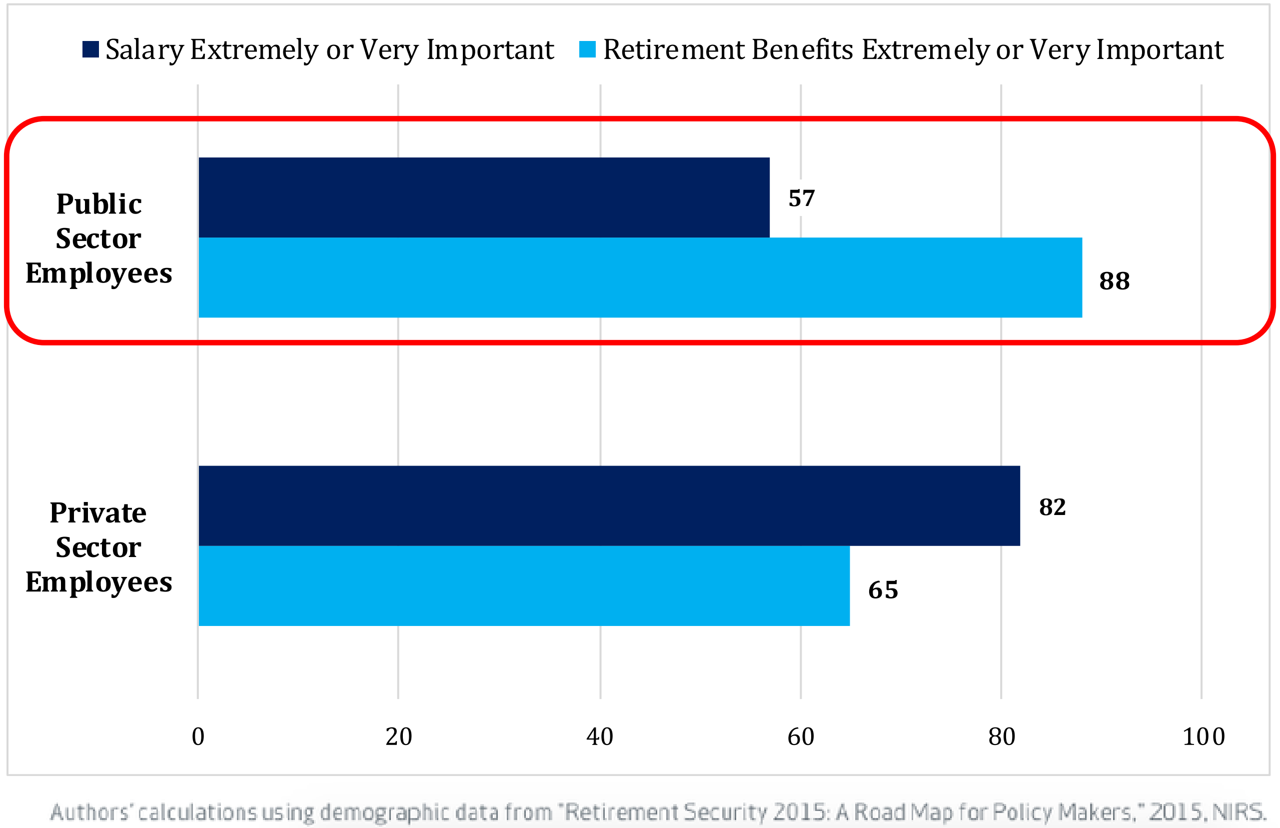
FIGURE 3. AVERAGE JOB LOSS RATE, BY SECTOR, 1986-2004



Note: State and local average is for all public sector workers.
Source: Farber (2005).

Public Retirement Plan Analysis
The Public Employee - Benefits

Sound retirement benefits are particularly important in the public sector.

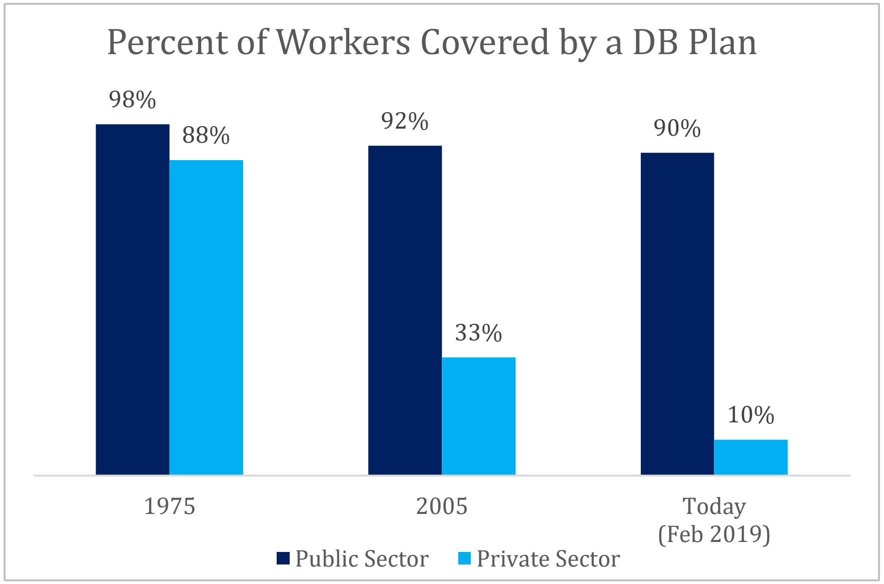


Source: Retirement Security 2015, NIRS NATIONAL INSTITUTE ON RETIREMENT SECURITY

Source: Forbes "The Dangerous Consequences of Cutting Public Safety Pensions", October 2018

Public Retirement Plan Analysis

Employer Landscape Changes → Pension Change (Private Sector)



Sources: Center for Retirement Research at Boston College (U.S. Congress, Author's calculations from U.S. Department of Labor, U.S. Department of Labor, Standard & Poor's); Bureau of Labor Statistics

- The demise of old firms in manufacturing and other industries and the rise of new firms in services and high tech provided an **automatic mechanism for pension change in the private sector.**

- No such "organizational churn" exists in the public sector, as most governmental units exist in perpetuity, so conversions from a DB to a DC plan are more difficult. The only way to shift plan type is through the political process.

Sources: https://crr.bc.edu/wp-content/uploads/2007/12/slp_2.pdf; https://www.investopedia.com/terms/p/pensionplan.asp

Public Retirement Plan Analysis
Regulatory Changes → Pension Change (Private Sector)

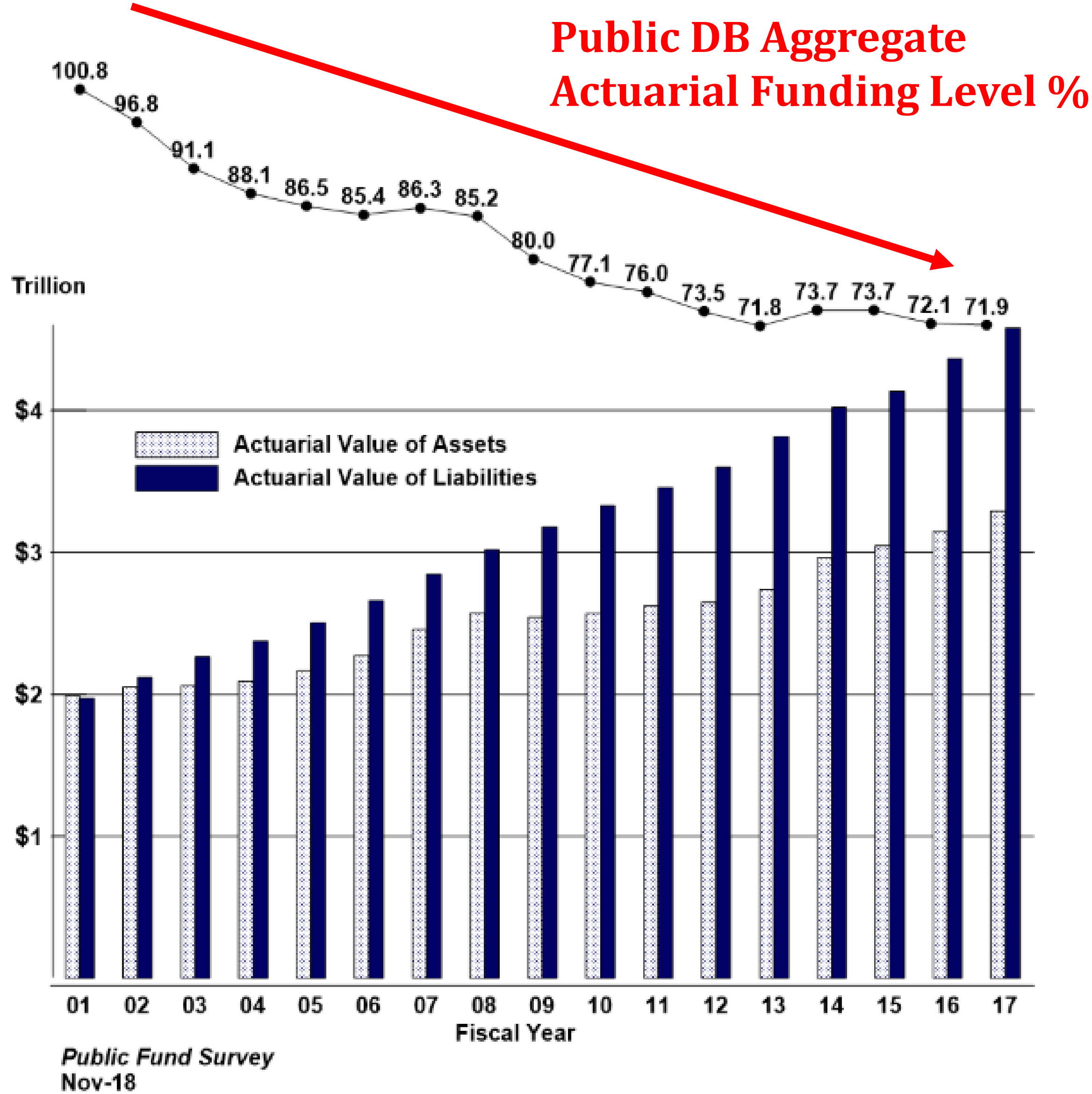
Employee Retirement Income Security Act of 1974 (ERISA):
- Imposes minimum standards for participation, vesting, and funding
- Increased regulatory costs for DB pension providers
  → The legislation created an **attractive** (to employers) alternative to the DB pension through 401(k), and an interest (to employees) in **portable** pension benefits as the labor force has become more mobile

Pension Benefit Guaranty Corporation (PBGC):
- Collects premiums from plan sponsors and pays benefits in the event of plan termination.

The laws that <u>increased</u> the regulatory burden on private sector pension plans do not apply to public sector plans … Most **Public plans are not covered by ERISA or the PBGC.**

The absence of these regulations increases the desirability of defined benefit plans by lowering administrative costs and allowing later vesting.

Public Retirement Plan Analysis
Public DB Headwinds



Source: https://www.nasra.org/publicfundsurvey

Public Pension Reform – Legal Obstacles

Since 2008, more than 40 state and local jurisdictions have faced lawsuits alleging that pension reform is unconstitutional.

Three main legal approaches to public pension benefits:

- A constitutional approach
- A contract rights approach
- A property rights approach

Sources: https://protectpensions.org/2018/05/14/legal-protections-public-pensions/; https://www.capitaliq.com/CIQDotNet/CreditResearch/RenderArticle.aspx?articleId=1992126&SctArtId=448092&from=CM&nsl_code=LIME&sourceObjectId=10428545&sourceRevId=2&fee_ind=N&exp_date=20280209-22:12:00

Legal obstacles to pension reform:

- Some pension benefits are specifically **protected by the state constitution**, considered a contractual obligation, or treated as a property interest under state law.
- State law and legal interpretation determine whether this legal obligation applies to all accrued and prospective benefit changes for current employees or just certain accrued benefit changes.
- In some states, (California and Illinois), legal precedent and state law have posed **formidable obstacles** to any accrued or prospective benefit changes for current employees.

Sources: https://protectpensions.org/2018/05/14/legal-protections-public-pensions/; https://www.capitaliq.com/CIQDotNet/CreditResearch/RenderArticle.aspx?articleId=1992126&SctArtId=448092&from=CM&nsl_code=LIME&sourceObjectId=10428545&sourceRevId=2&fee_ind=N&exp_date=20280209-22:12:00

Public Retirement Plan Analysis
Public Pension Reform

The Global Financial Crisis reduced state and local pension fund assets **from $3.2 trillion** at the end of 2007 to **$2.2 trillion** in March 2009, prompting changes to public pension plans.

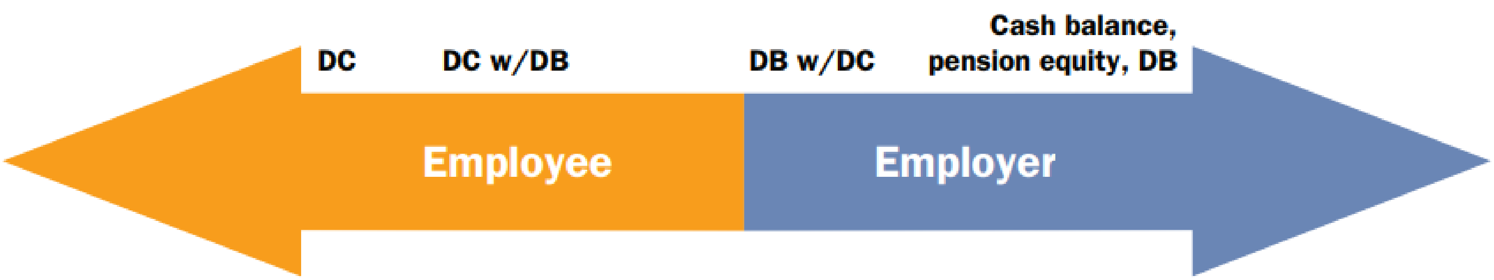
While changes are being made… **nearly every state chose to retain its traditional pension plan** and modify employer and employee contributions, restructure benefits, or both

Source: National Association of State Retirement Administrators – December 2018 Spotlight on Significant Reforms to State Retirement Systems

Hybrid Plans

- Combine elements of DB and DC plans, transferring some **risk** from the employer to the employee.
- Contribution requirements to the **DB component** of hybrids vary: some are funded solely by employer contributions, while others require contributions from both employees and employers.
- Employees may also be required to contribute a set amount of salary toward the DC portion of the hybrid plan benefit.

Figure 1. *Spectrum of Investment Risk Associated with Different Employer Sponsored Retirement Plan*



Source: https://www.nasra.org/files/Issue%20Briefs/NASRAHybridBrief.pdf; https://www.nasra.org/files/Issue%20Briefs/NASRAContribBrief.pdf
https://www.dol.gov/sites/default/files/ebsa/about-ebsa/our-activities/resource-center/faqs/cash-balance-pension-plans-consumer.pdf

Types of Hybrid Plans

DB+DC Plan: Combines a traditional DB plan (usually has a lower level of benefit accrual) with an individual DC savings account.

Cash Balance Plan: Benefits are determined by the value of the participants retirement account (cash balance) and their ***age at retirement***. Participant's account is credited each year with a **pay credit** (based on compensation) and an **interest credit** (either fixed or variable rate linked to an index such as the 1-year T-bill).

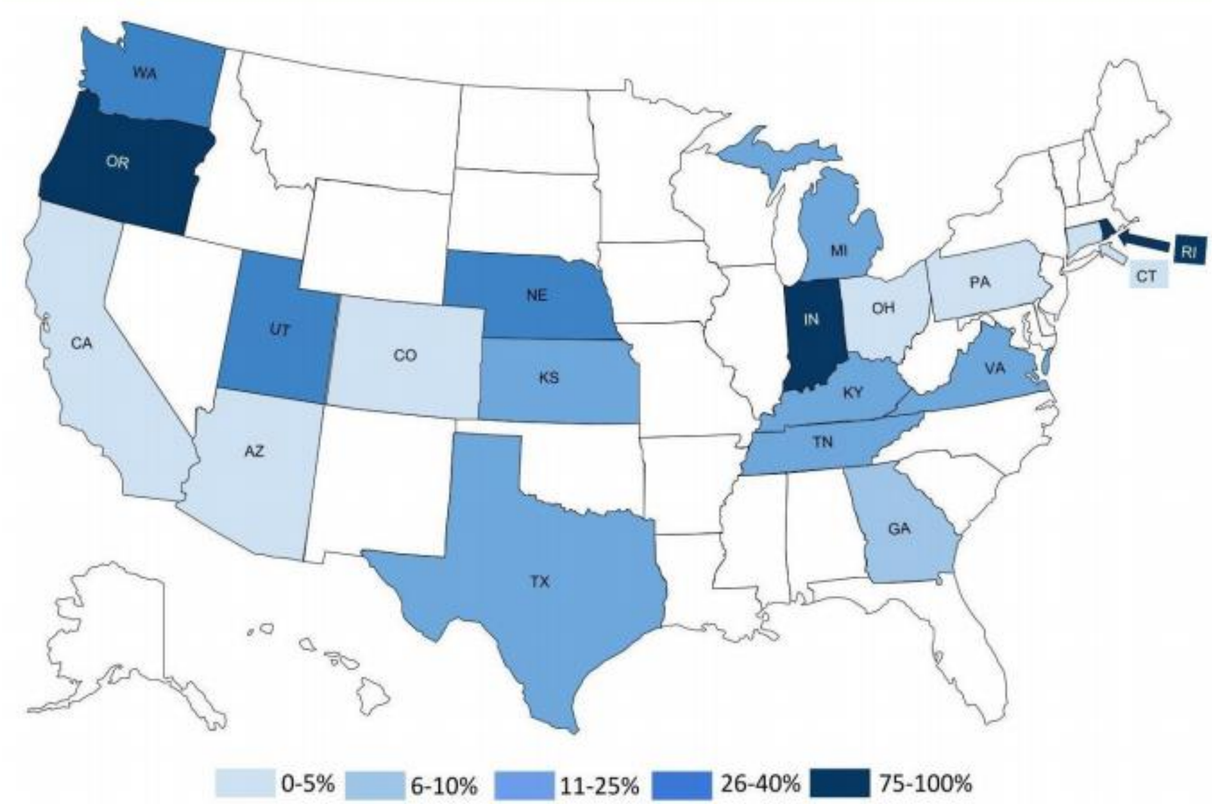
State Hybrid Plan Examples:

1) Hybrid plans in Indiana, Ohio, Oregon, and Washington: employer finances the entirety of the **DB component**, and the **DC component** is funded by mandatory employee contributions (ranging from 3% to 15% of salary).
2) The Georgia Employees' Retirement System hybrid requires employees to contribute 1.25% of salary to the **DB component**, with the remainder of the DB plan cost financed by the employer. Employees are automatically enrolled in the **DC component** at 1% or 5% of salary, depending on date of hire, and may opt out or contribute more.

Source: https://www.nasra.org/files/Issue%20Briefs/NASRAHybridBrief.pdf; https://www.nasra.org/files/Issue%20Briefs/NASRAContribBrief.pdf
https://www.dol.gov/sites/default/files/ebsa/about-ebsa/our-activities/resource-center/faqs/cash-balance-pension-plans-consumer.pdf

Public Retirement Plan Analysis
Public Pension Reform - Hybrids

Figure 1: Percentage of public employees who participate in a hybrid plan in states that administer CB or DB+DC plans as a mandatory or optional primary retirement benefit for groups of general, public safety or K-12 educational employees



Growing number of states have established hybrid plans on either an **optional or mandatory** basis to better allocate risk among employer/employees. Continued focus on hybrids also occurs as states find closing traditional pension plans to future, and even existing employees could ***increase*** (rather than decrease) costs.

Source: NADRA Issue Brief State Hybrid Retirement Plans January 2019

Cautionary Tales of Public Pension Reform

Case Studies

Case (Year Enacted)	Action Taken	Effect	End Result
Palm Beach Town Council (2012)	Cut police & firefighters' DB benefits to 1/3 their prior value and added a DC plan with 100% employer match.	20% of town's workforce retired right away; over the next 4 years 109 public safety officers left before retirement; 56 rookie replacements left police force before benefits vested, each costing Palm Beach $240,000 in training that they took elsewhere.	In 2016, the town voted to restore a DB plan by doubling the benefit formula and lowering the retirement age. The town increased employee contributions and eliminated the DC plan to offset the cost.
Alaska PERS and TRS (2005)	Legislation enacted moving employees hired after 7/1/06 into DC accounts. Since public employees in Alaska do not participate in social security, the DC plan would then be their only source of retirement savings.	Unfunded liability of legacy DB went from $5.7 billion in 2005 to $12.4 billion in 2014. Alaska Department of Public Safety recently released a study discussing the recruitment and retention challenges it faces due to its lack of a DB pension plan for new employees.	In 2017, the Alaska House of Representatives held a hearing and explored reopening the DB plan. The bill did not pass, but efforts remain underway to push for reopening the pension plan.
Michigan State Employee Retirement System (1997)	DB plan was overfunded at 109%, so the state closed the DB plan to new state employees and offered DC accounts instead.	By 2012, the funded status dropped to about 60%, with $6.2 billion in unfunded liabilities.	In recent years, the state has been more disciplined in funding the DB plan.

Source: Forbes; National Public Pension Coalition; Reason Foundation. For informational purposes only.

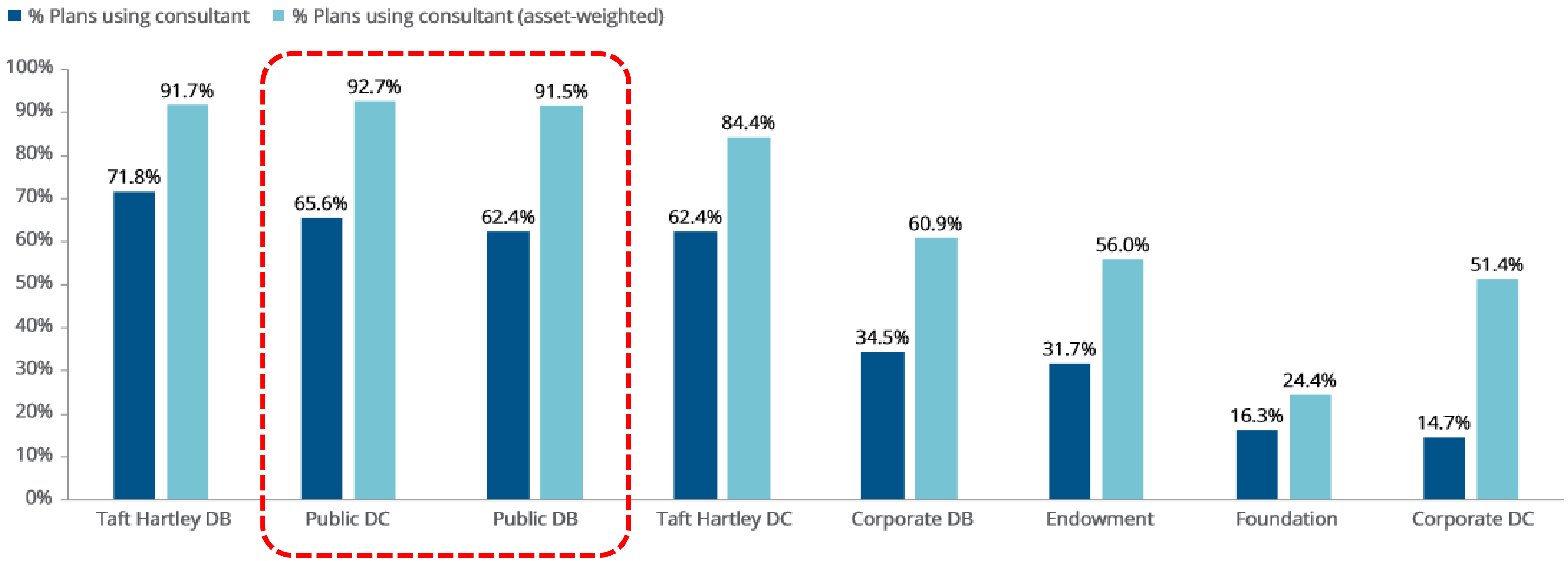
Public Retirement Plan Analysis
Consultant Use by Public DC Plans

About 2/3 of public DC plans use a consultant, accounting for more than 90% of public DC assets (similar profile to Public DB channel)

Consultant Use by Institutional Channel, 2018

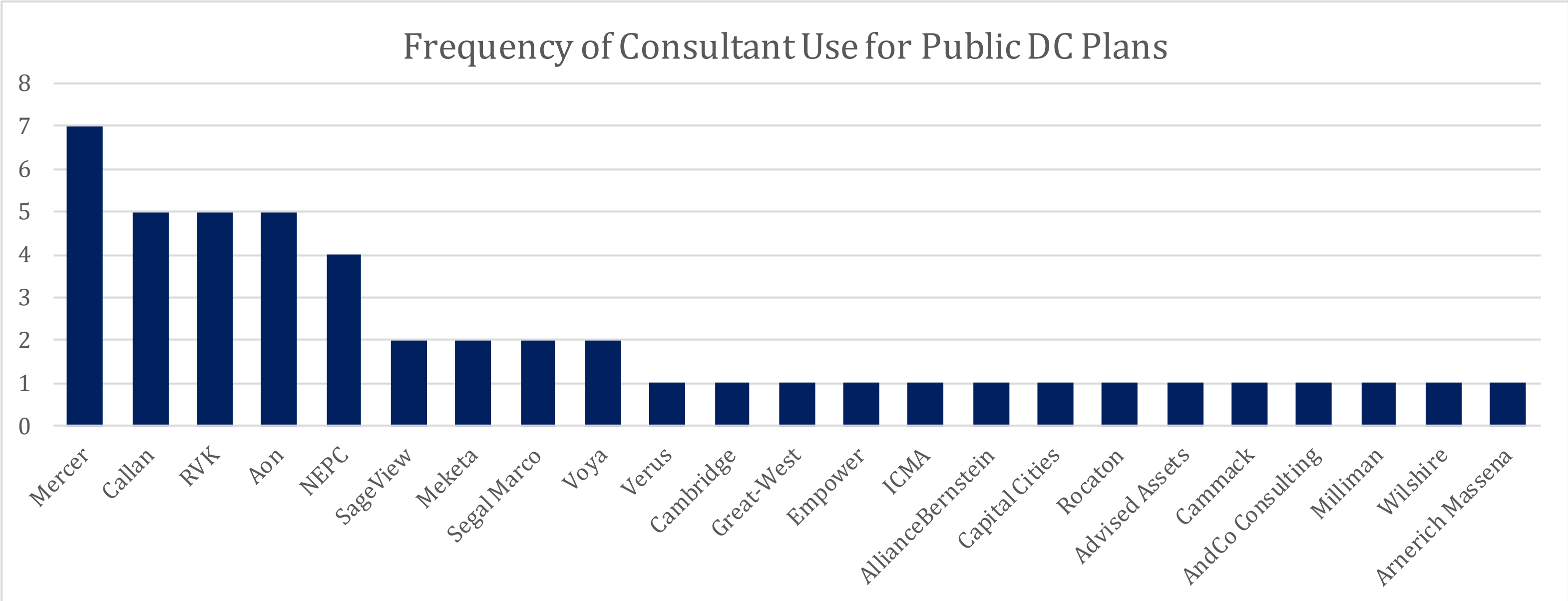
Sources: S&P Capital IQ MMD, Cerulli Associates

Analyst Note: Analysis includes 36,681 institutions.



Source: Cerulli US Monthly Product Trends – November 2018

Public Retirement Plan Analysis
Consultant Use by Public DC Plans



Note: This is a small sample size as only 21% of public plans included data on DC consultant usage

With plans that indicated a **DC consultant** is used, more than half of the time the consultant mentioned was one of the following:

- **Mercer**
- **Callan**
- **RVK**
- **Aon**
- **NEPC**

Source: P&I survey or P&I estimate from regulatory filings; as of 9/30/18. For informational purposes only. This information should not be construed as an endorsement of any of the firms listed.

Public Retirement Plan Analysis

Pubic DC Asset Mix

Average DC Plan Asset Mixes

As of September 2018

Top 200 Plans

Public Plans	2018	2017
Domestic Stock	43.0%	41.0%
Target Date	21.6%	18.7%
Stable Value	14.8%	18.0%
International Stock	6.5%	7.5%
Other	5.8%	6.0%
Fixed Income	5.5%	5.9%
Cash	2.4%	1.9%
Infation Protection	0.3%	0.3%
Annuities	0.1%	0.7%

Top 1,000 Plans

Public Plans	2018	2017
Domestic Stock	42.7%	40.9%
Target Date	22.1%	18.9%
Stable Value	15.0%	18.0%
International Stock	6.4%	7.5%
Other	5.6%	5.9%
Fixed Income	5.5%	5.9%
Cash	2.3%	1.9%
Infation Protection	0.3%	0.3%
Annuities	0.1%	0.7%

Source: P&I survey or P&I estimate from regulatory filings; as of 9/30/18. For informational purposes only. Not intended as investment advice.

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