

Public Pension Funding 101

2023 LAPERS Seminar
September 10, 2023

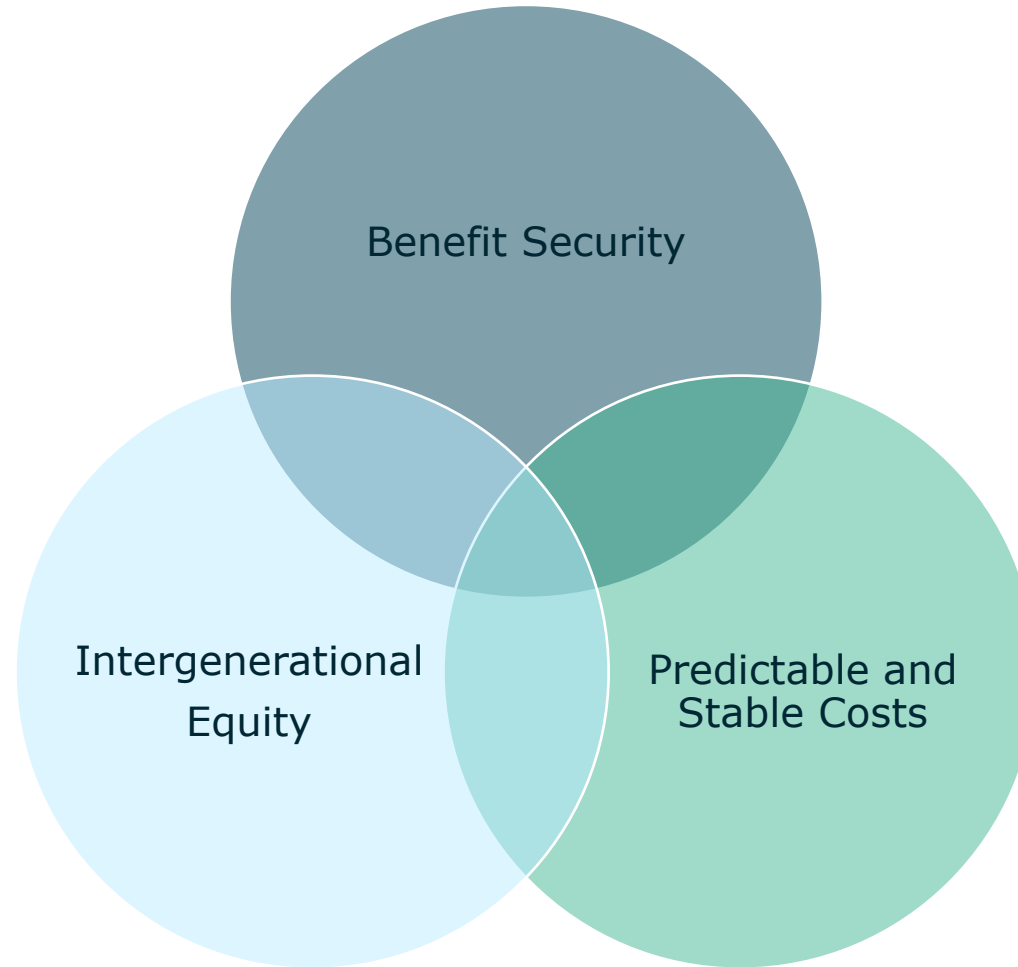
Kenneth J. “Kenny” Herbold, ASA, EA, CFA
Director of Actuarial Services
Louisiana Legislative Auditor



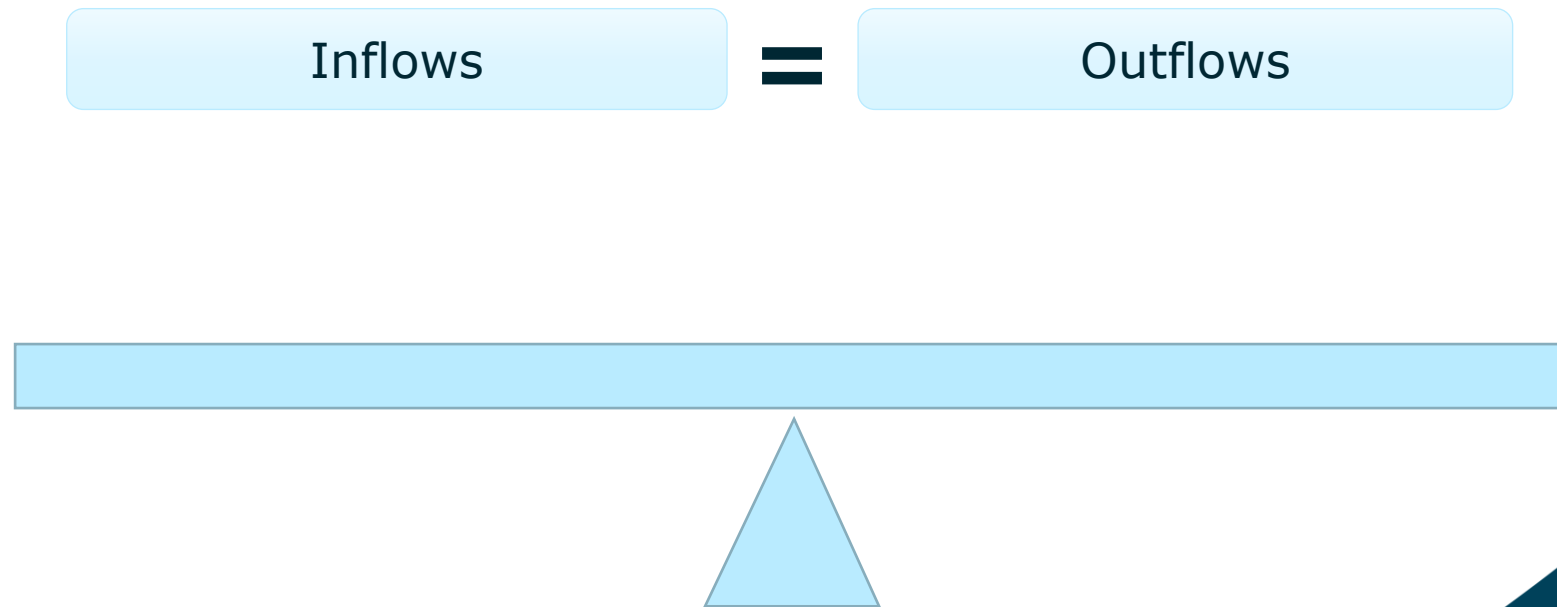
What's the Plan?

- The Big Picture
- Some Details
 - Assumptions
 - Cost Methods
 - Amortization Methods
 - Asset Smoothing
- How does it fit together?
- Extras

Balancing Objectives

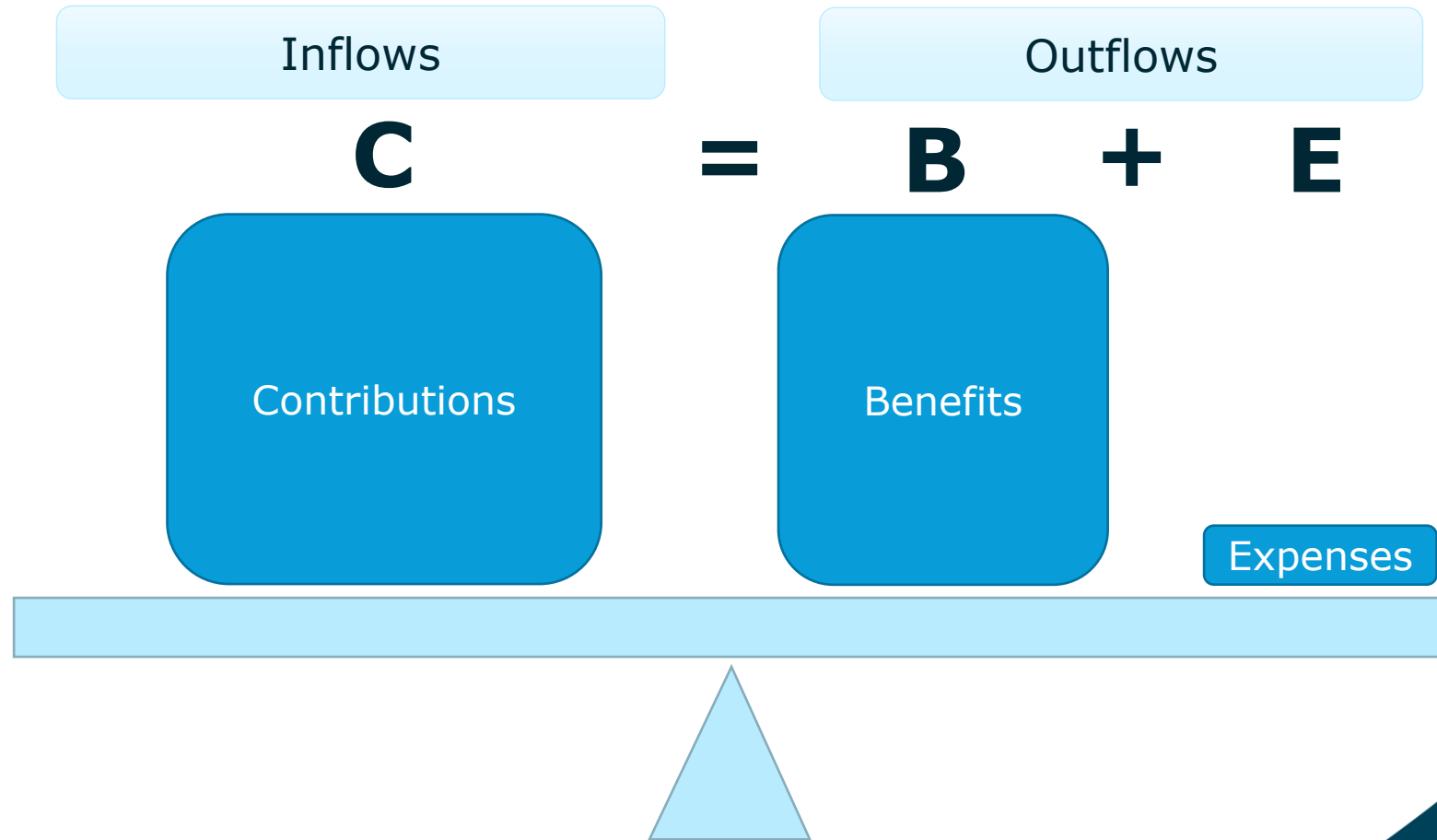


Pension Funding Equation



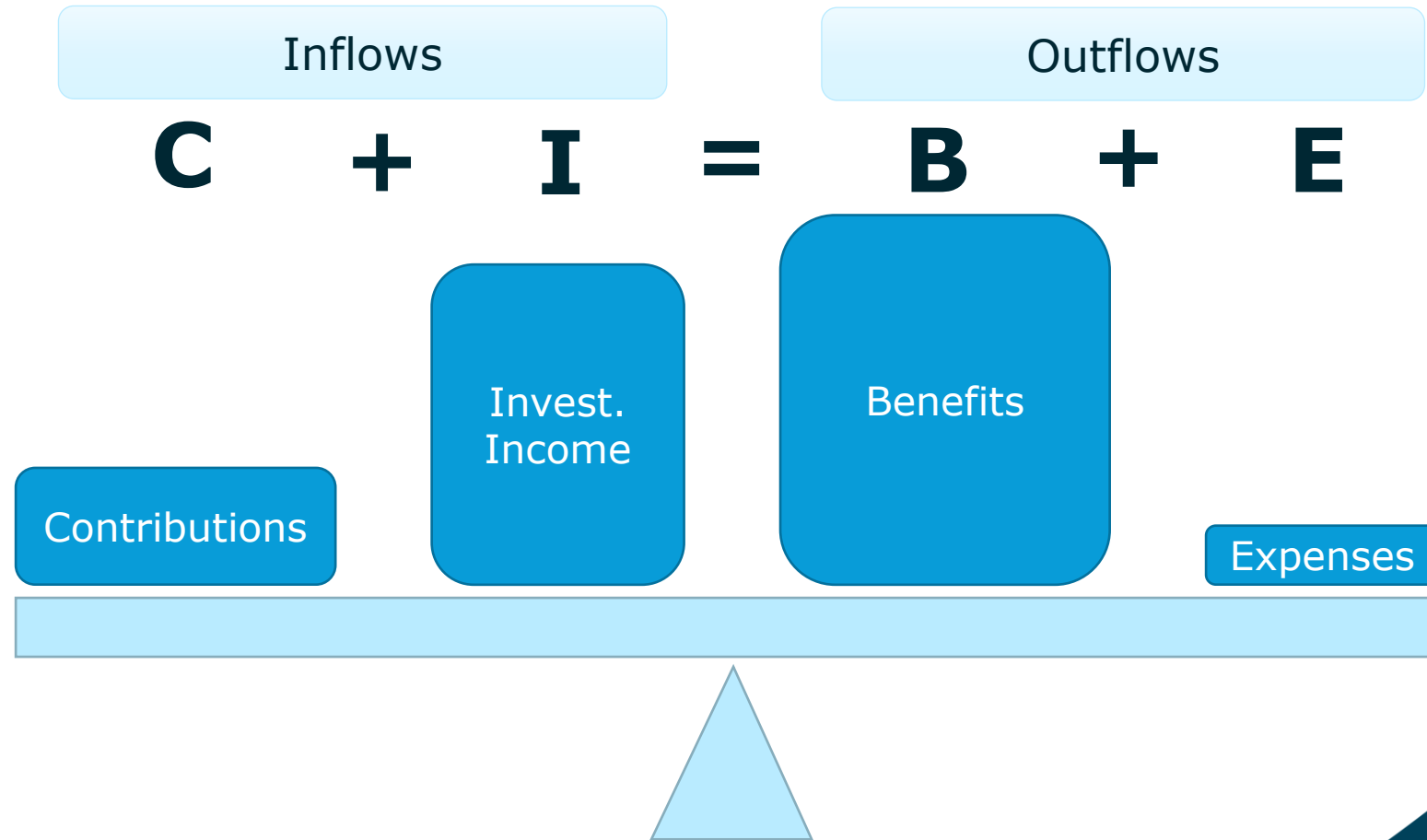
Pension Funding Equation

pay as you go



Pension Funding Equation

pre-funded



Personal Financial Planning



Personal Financial Planning

- When do you need to spend that money (car, college, retirement)?

Personal Financial Planning

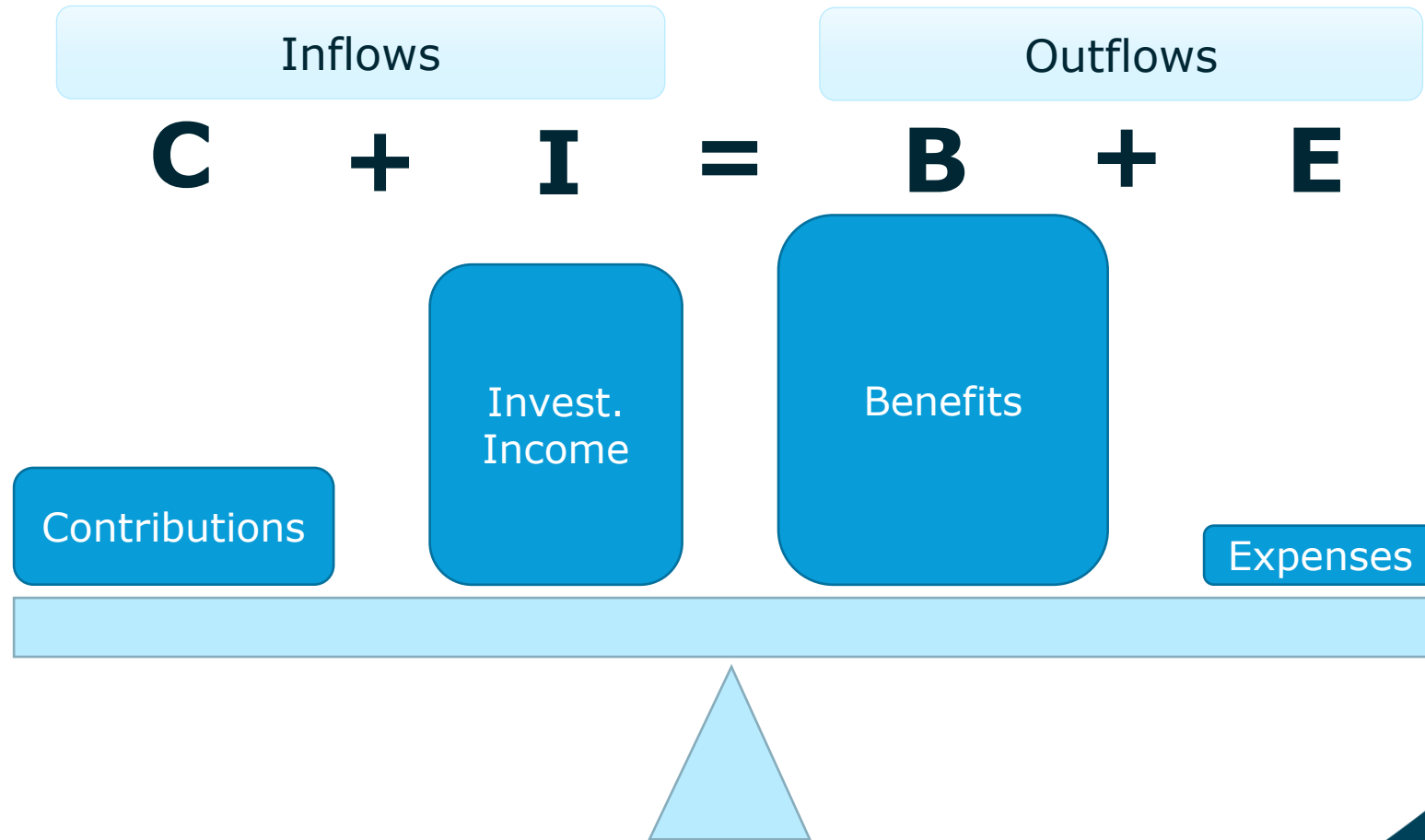
- When do you need to spend that money (car, college, retirement)?
- How much money will you actually need?

Personal Financial Planning

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- How much do you expect to earn on your money between now and then?

Pension Funding Equation

pre-funded



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- When do you need to spend that money (car, college, retirement)?
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Personal Financial Planning

- When do you need to spend that money (car, college, retirement)?
- How much money will you actually need?
- How much do you expect to earn on your money between now and then?
- How much of your current income will you need to save for that goal?
- What do you do when something changes in your plan?

The Process



The Process

- Estimate amount of money you need and when (lump sum or cash flow stream)

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- Monitor progress every year

The Process

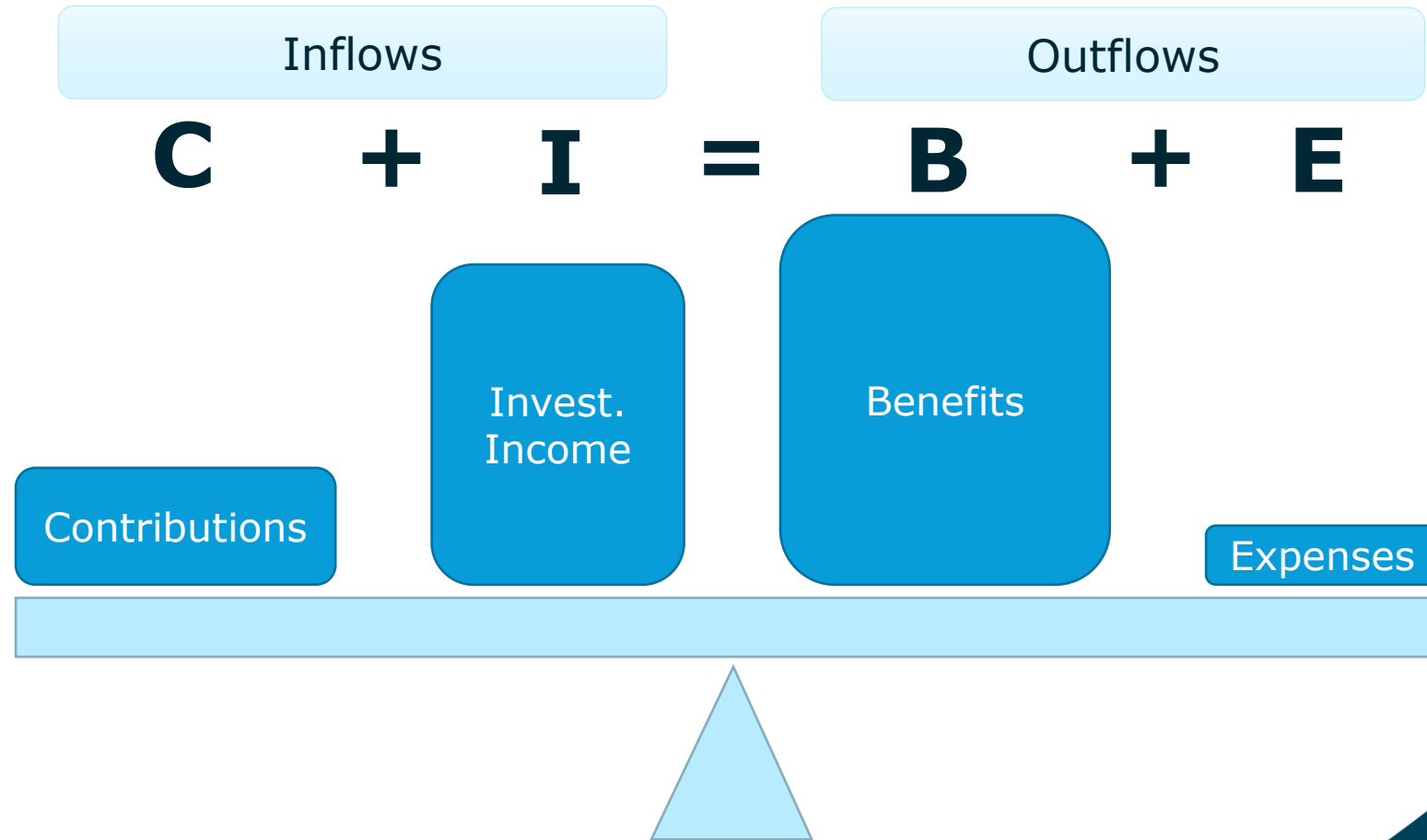
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- Adjust annual contribution (or ultimate targets) for gains or losses

Actuarial Funding Process

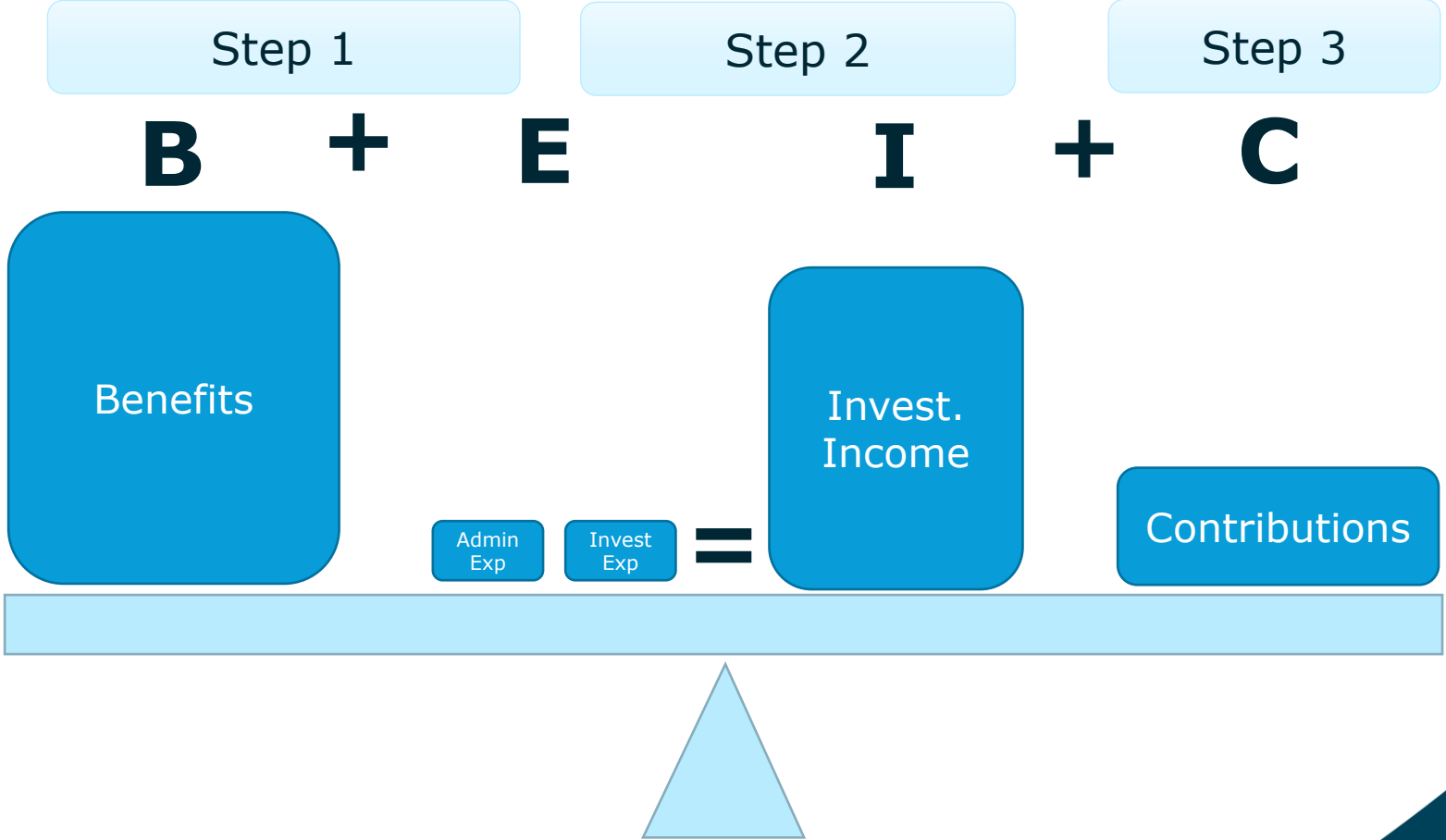
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Pension Funding Equation

pre-funded



Actuarial Funding Process



Assumptions

What is past is prologue,
but not a guarantee of
future performance

- William Shakespeare
(maybe)



Key Assumptions

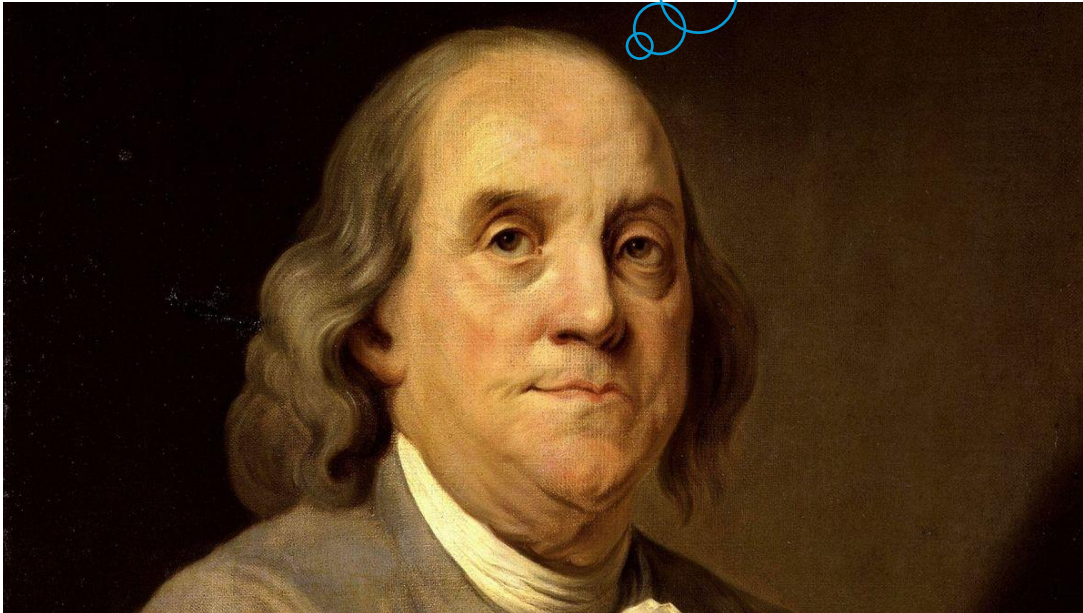
Demographic

Key Assumptions

Demographic

Actuarial Cost Methods

A penny saved \neq a
benefit earned

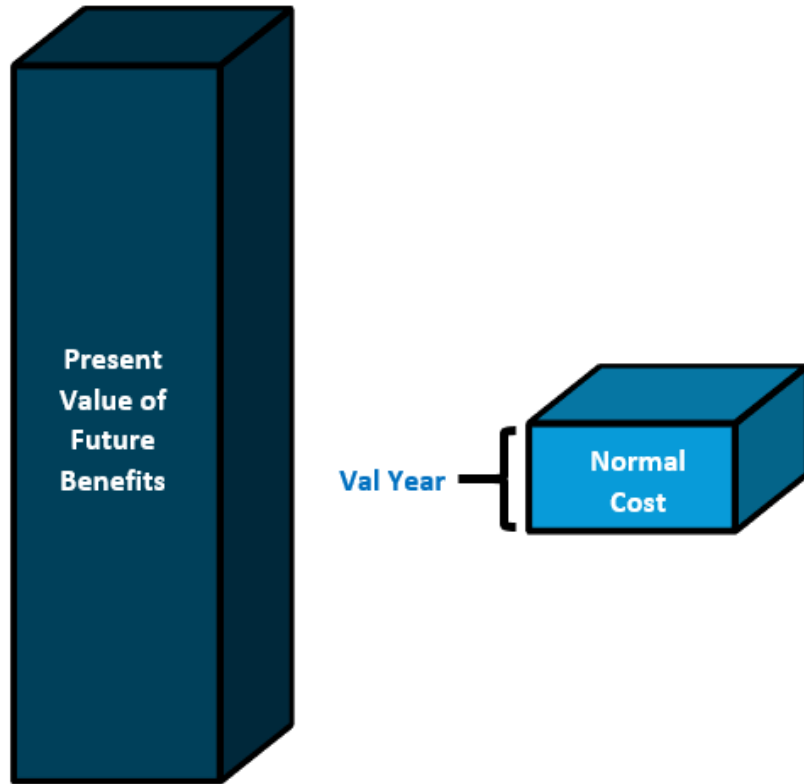


A Few Important Terms



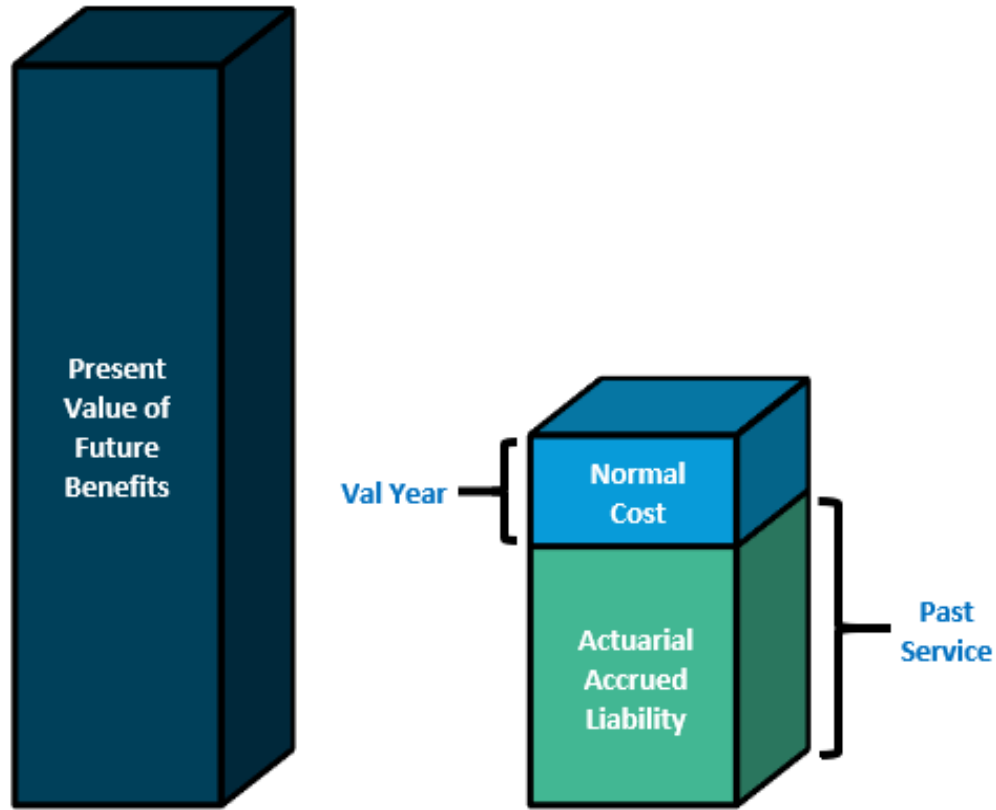
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A Few Important Terms



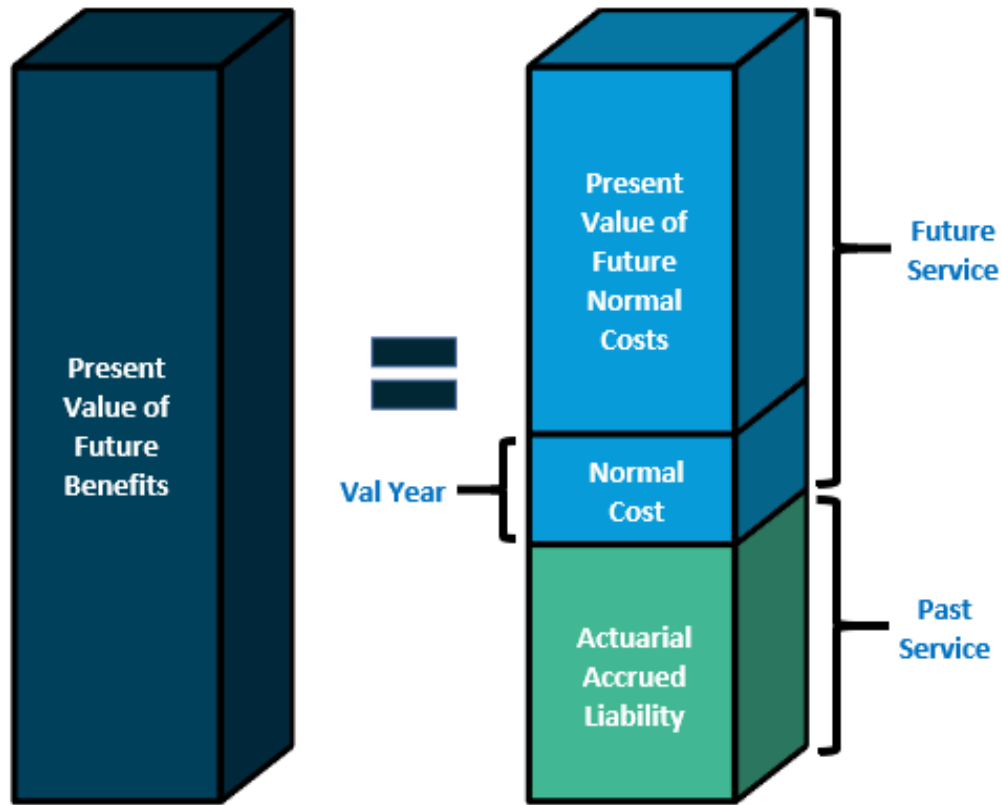
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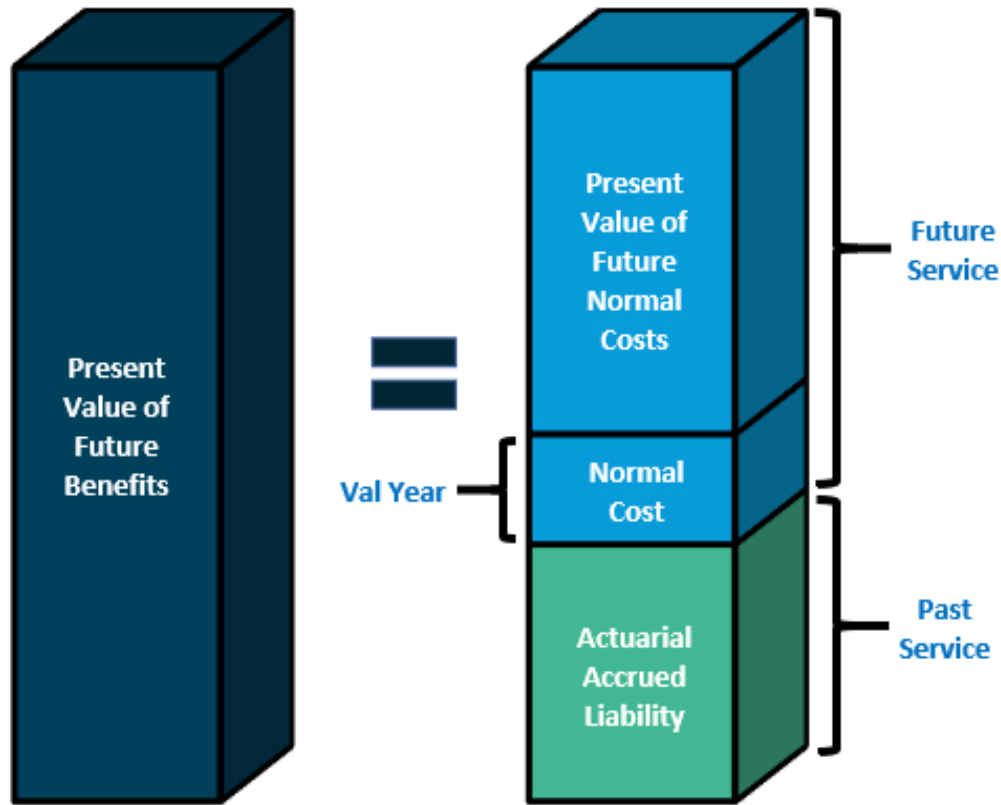
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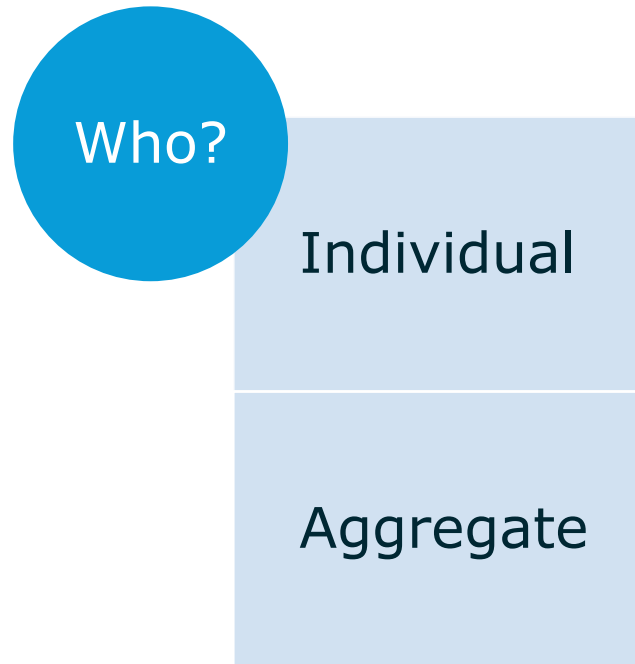
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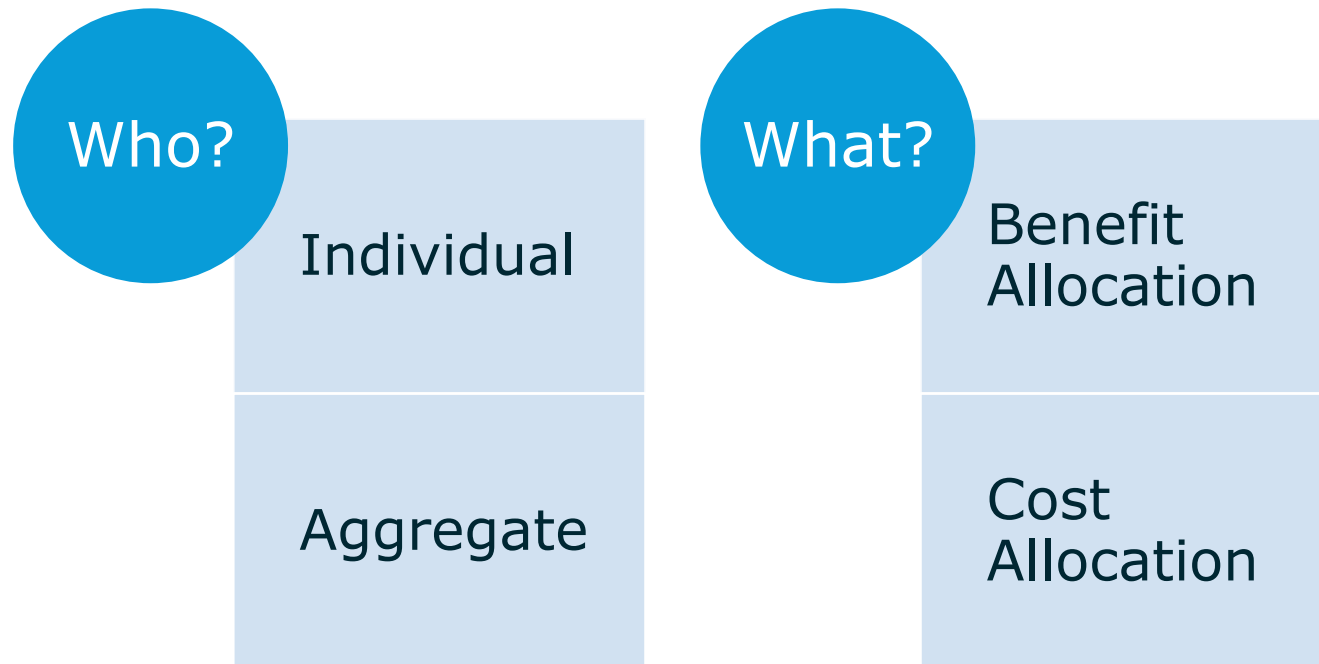


- Present Value of Future Benefits
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- Actuarial Cost Method

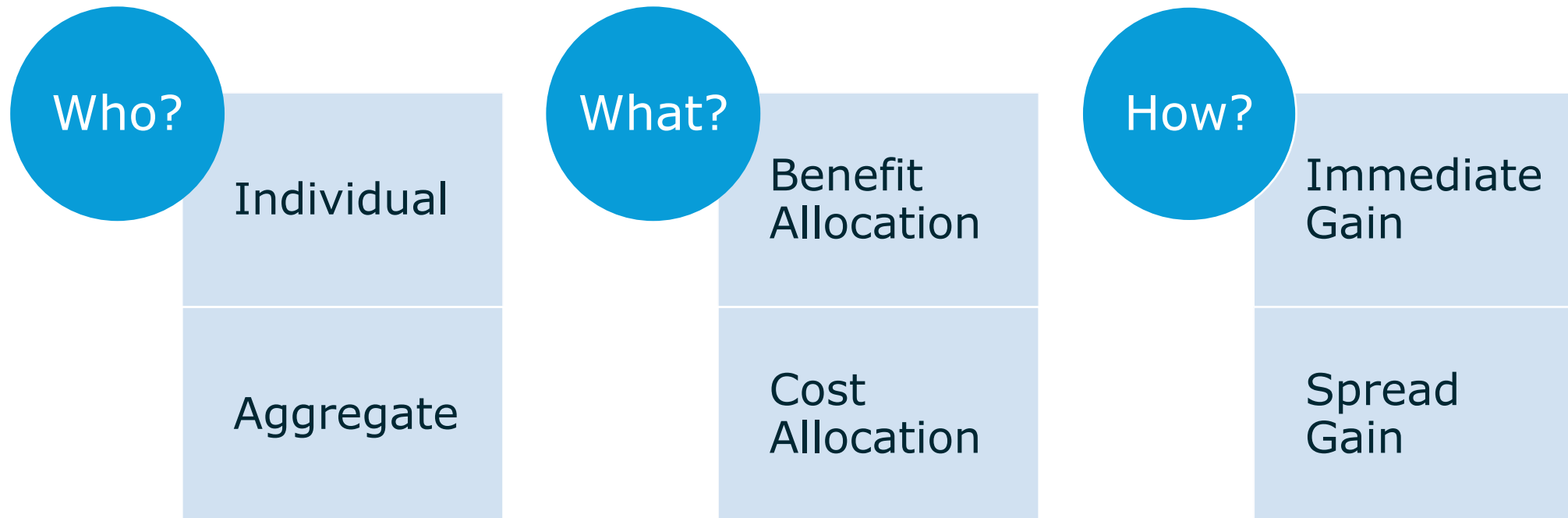
Cost Method Classifications



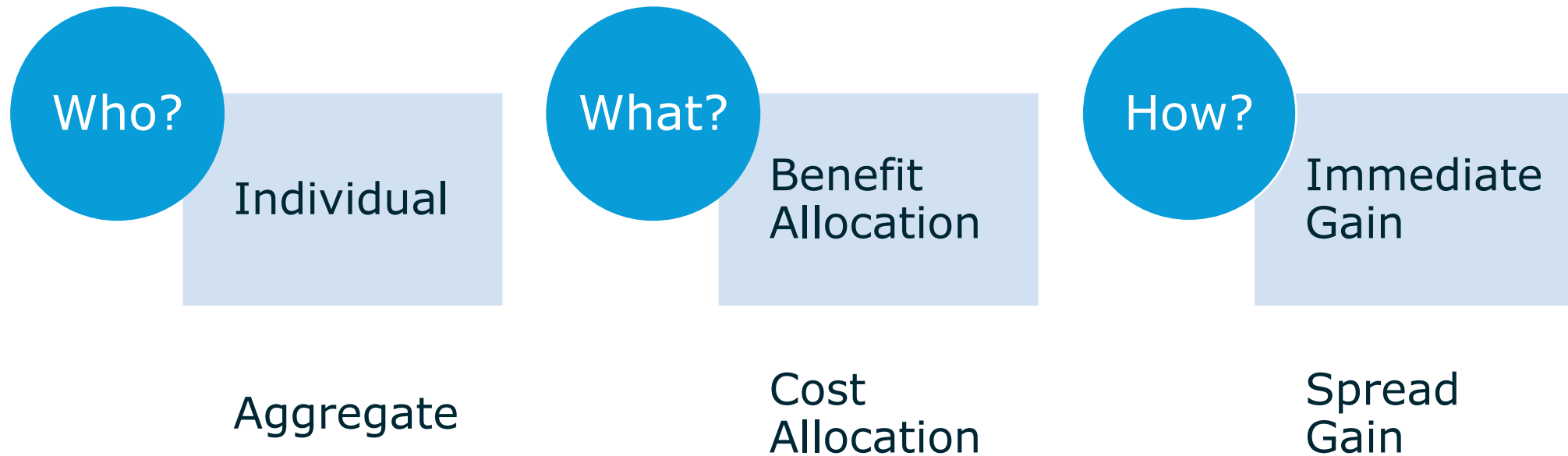
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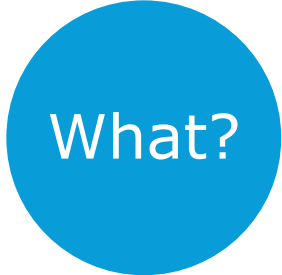
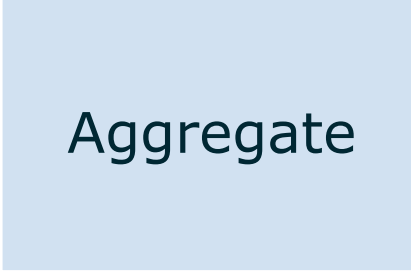
Unit Credit



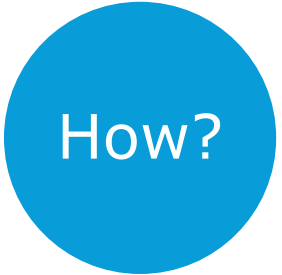
Aggregate



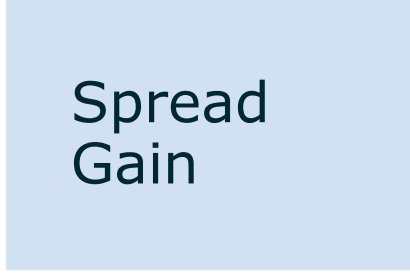
Individual



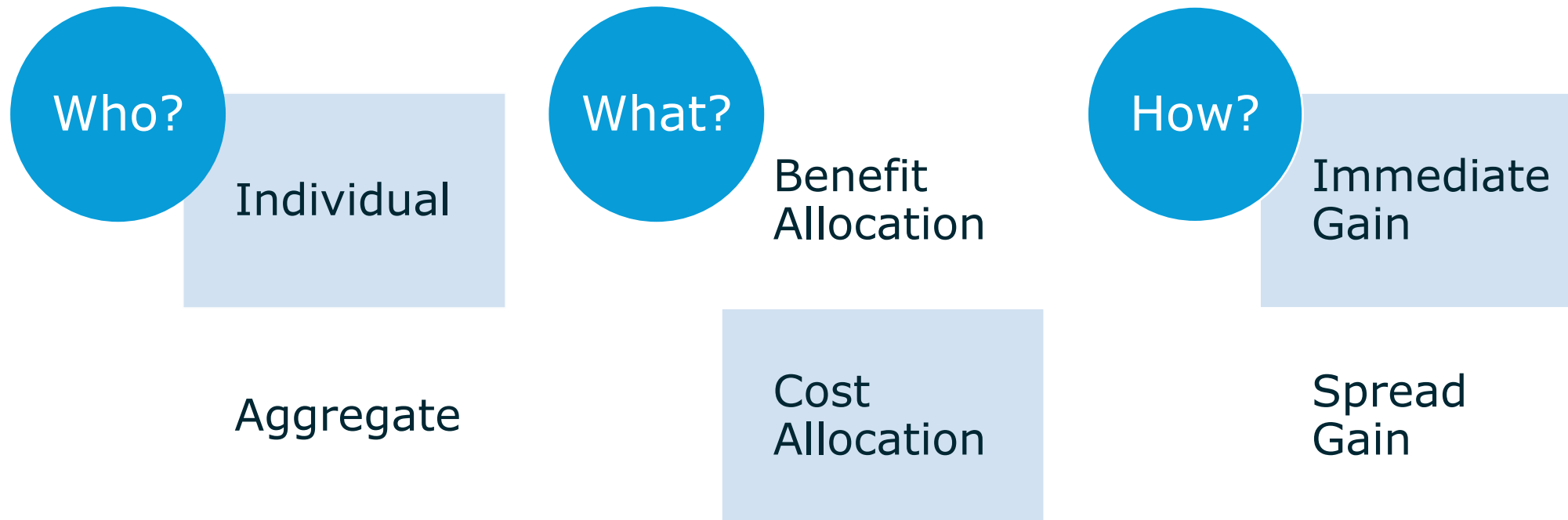
Benefit
Allocation



Immediate
Gain



Entry Age Normal



Amortization Methods



The Seer of Seers,
the Prognosticator of all
Prognosticators

Amortization Methodology

- Applicable to Immediate Gain methods only

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- Level dollar or level percent of pay payments



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- Fixed or demographic based period

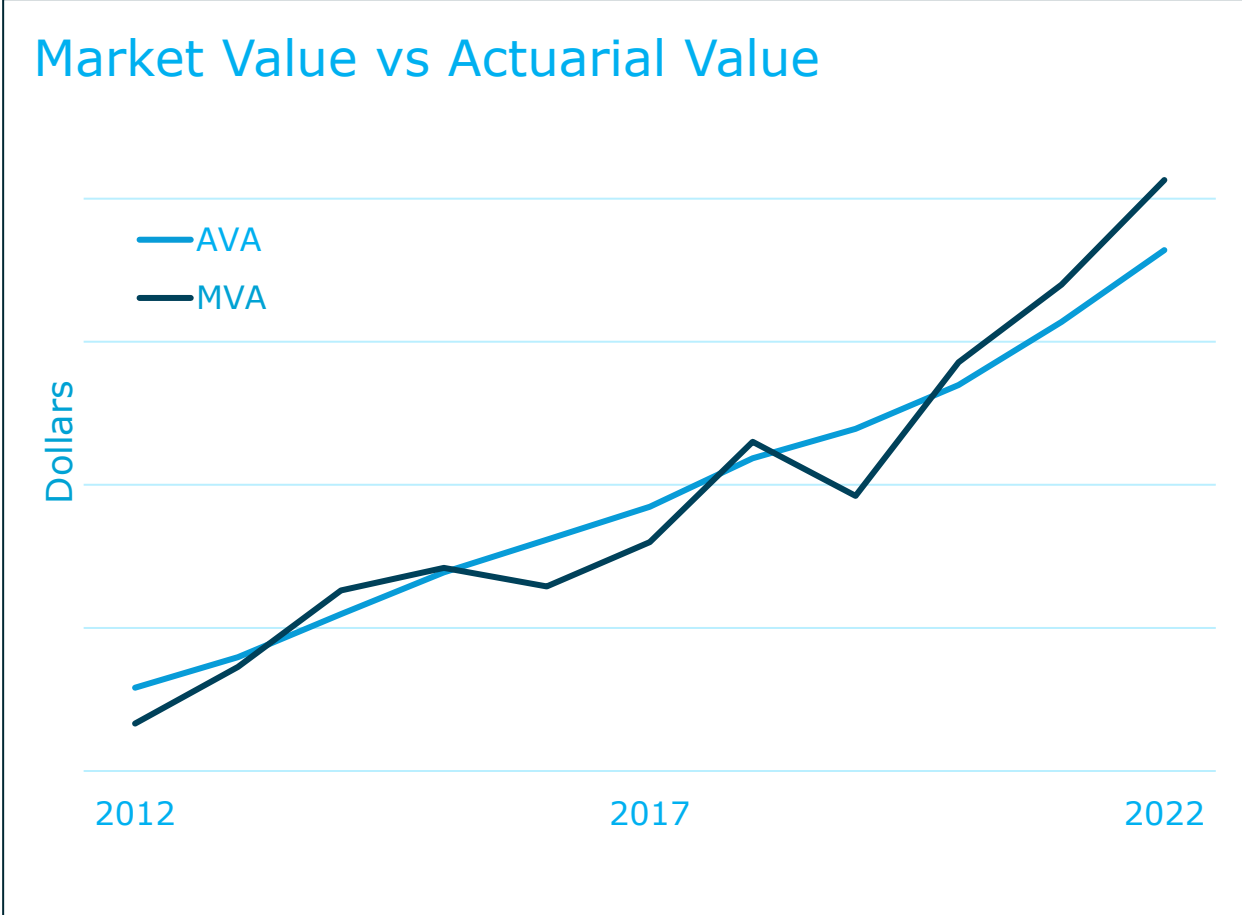


Amortization Methodology

- Applicable to Immediate Gain methods only
- Level dollar or level percent of pay payments
- Multiple or a single layer
- Fixed or demographic based period
- Closed or open (rolling) period

Asset Smoothing

Just a little something to take the edge off



Actuarial Funding Process



Actuarial Funding Process

- Estimate the benefit payment stream and calculate the assets needed to fund it

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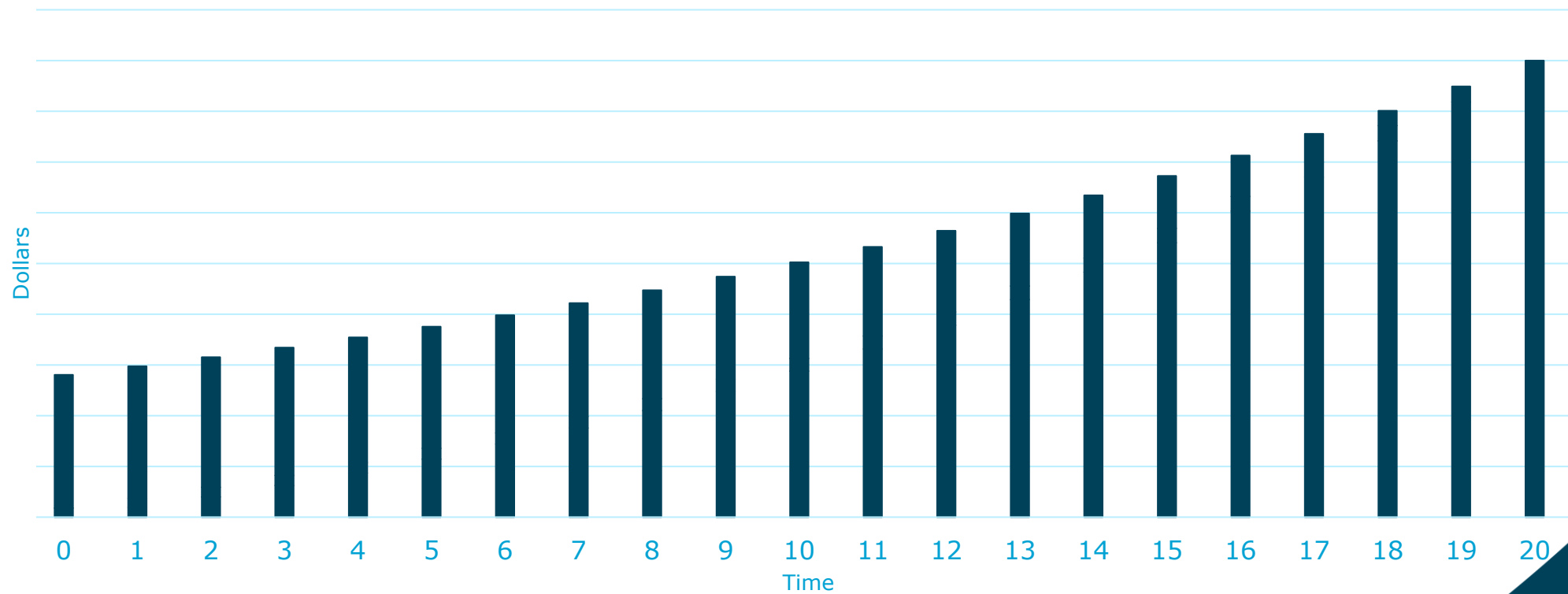


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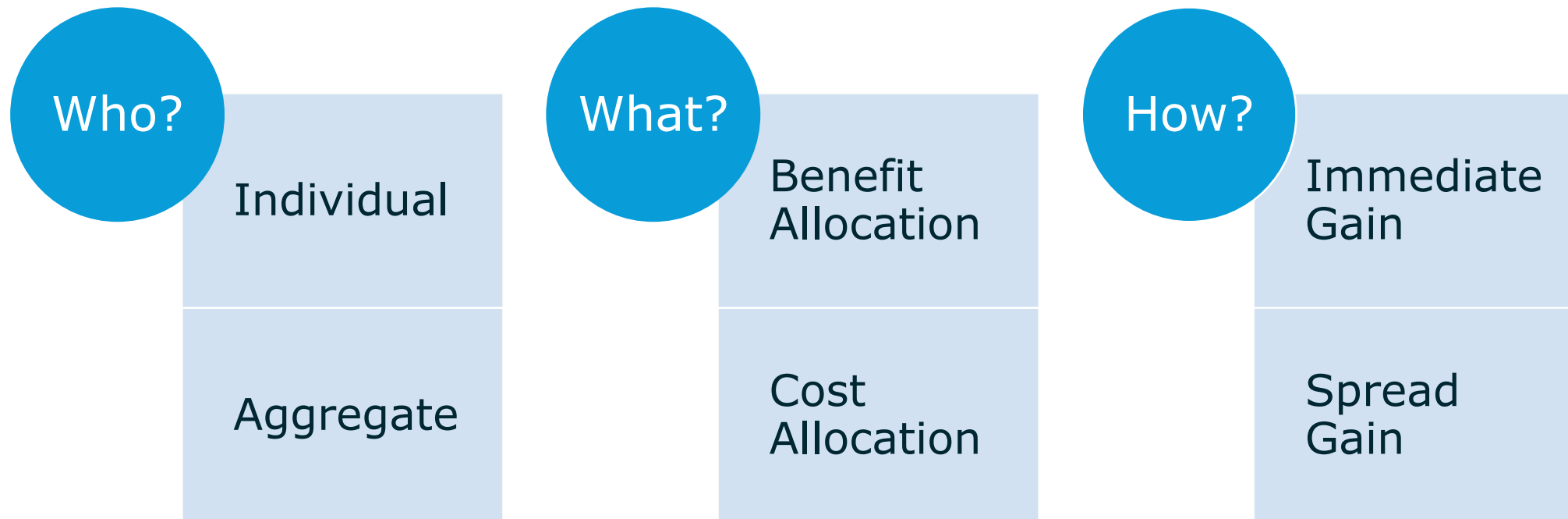
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Estimate the benefit payment stream and calculate the assets needed to fund it

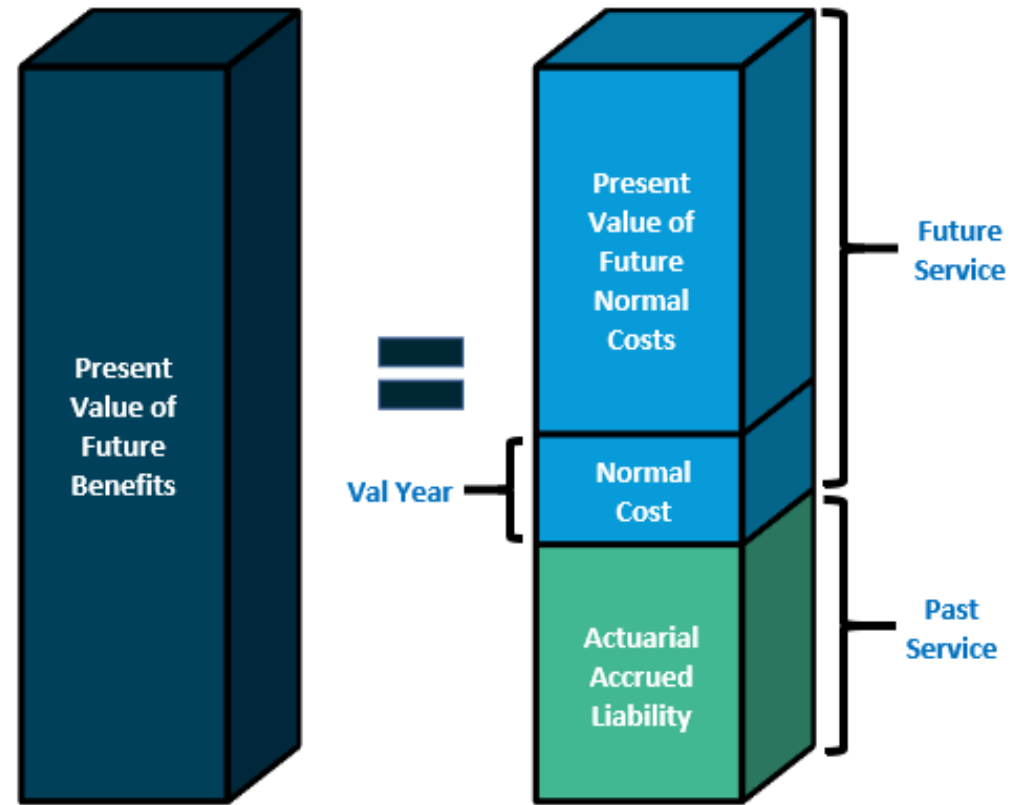
Present Value of Future Benefits



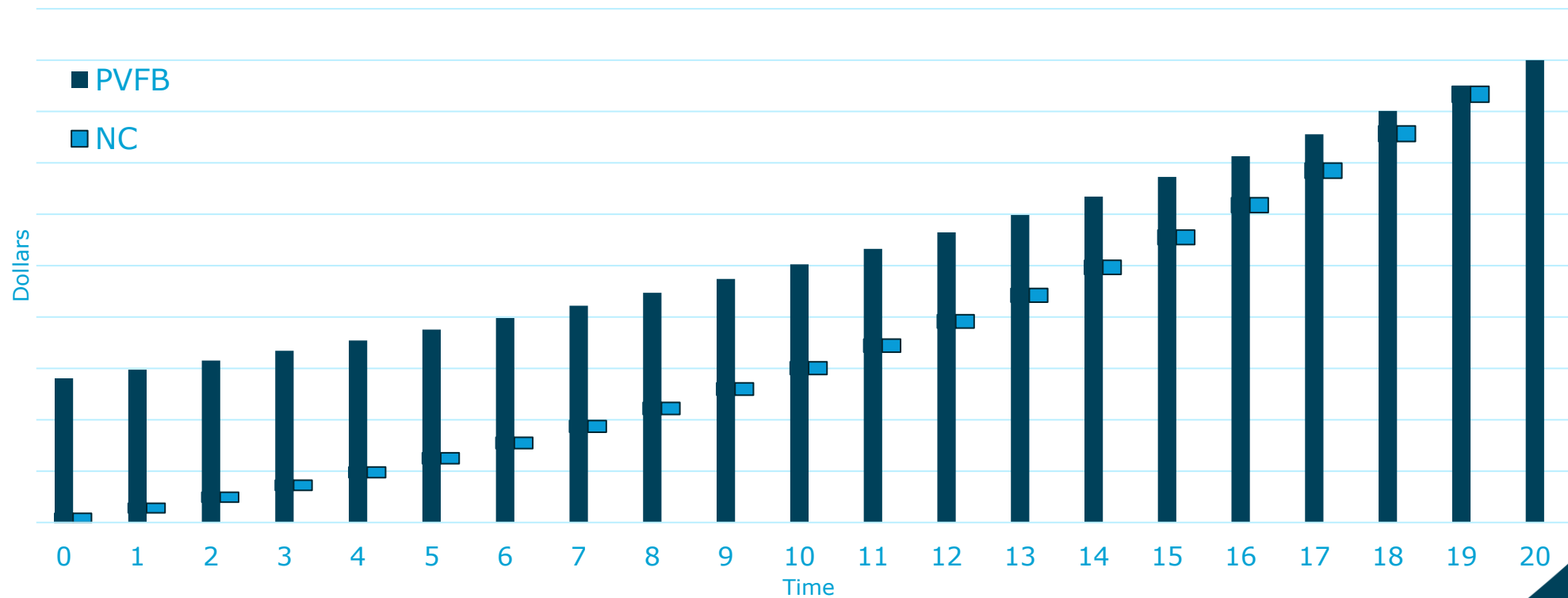
Design a plan to accumulate those assets i.e., pick a Cost Method



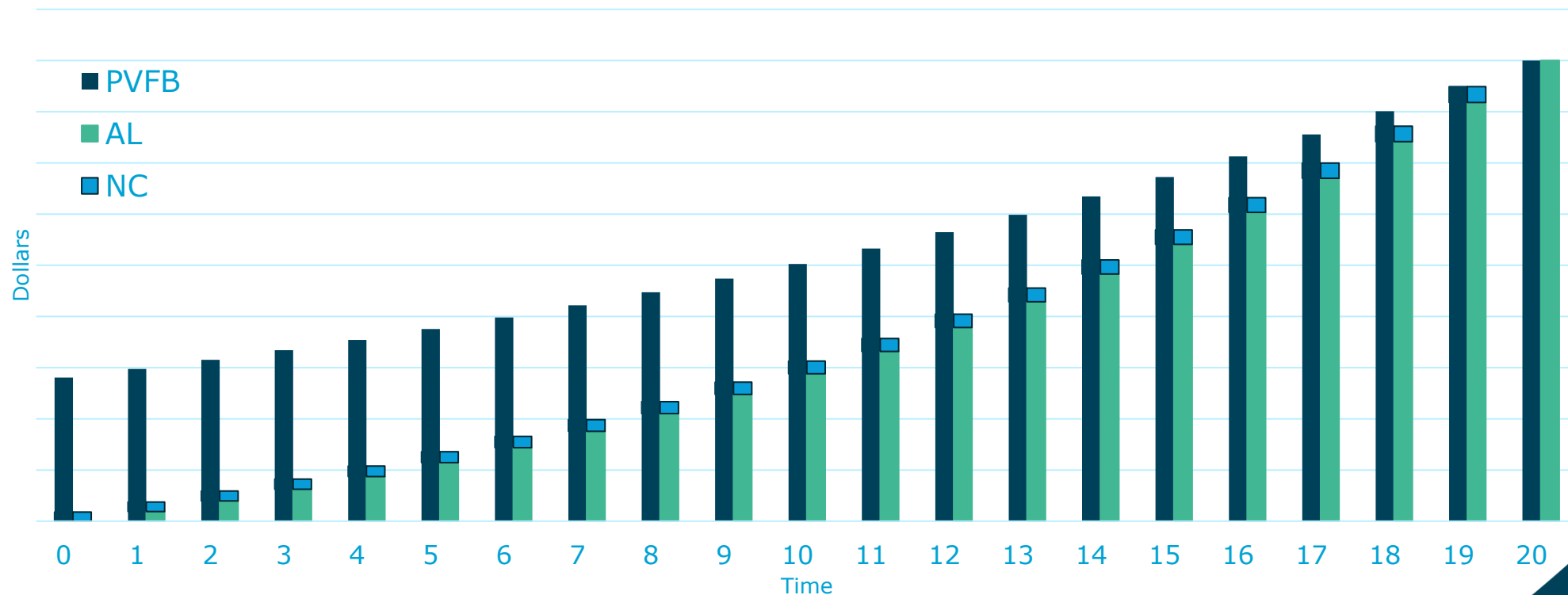
Don't Forget!



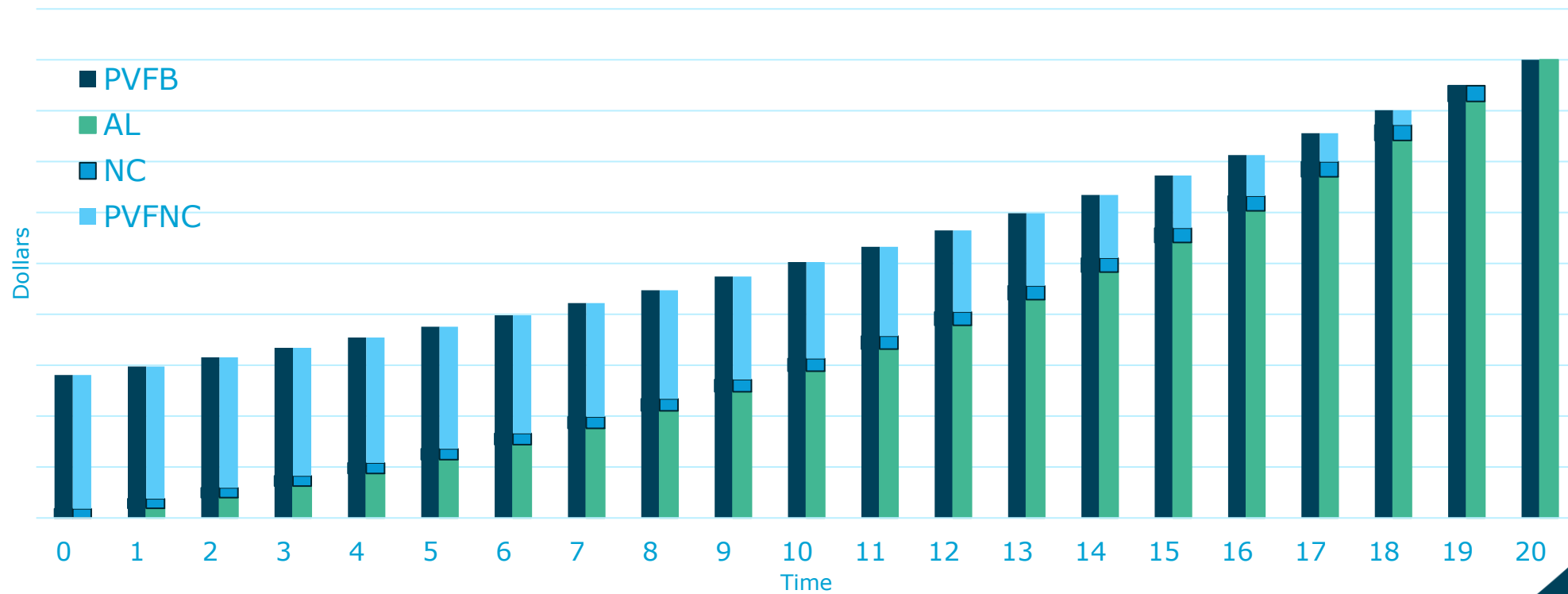
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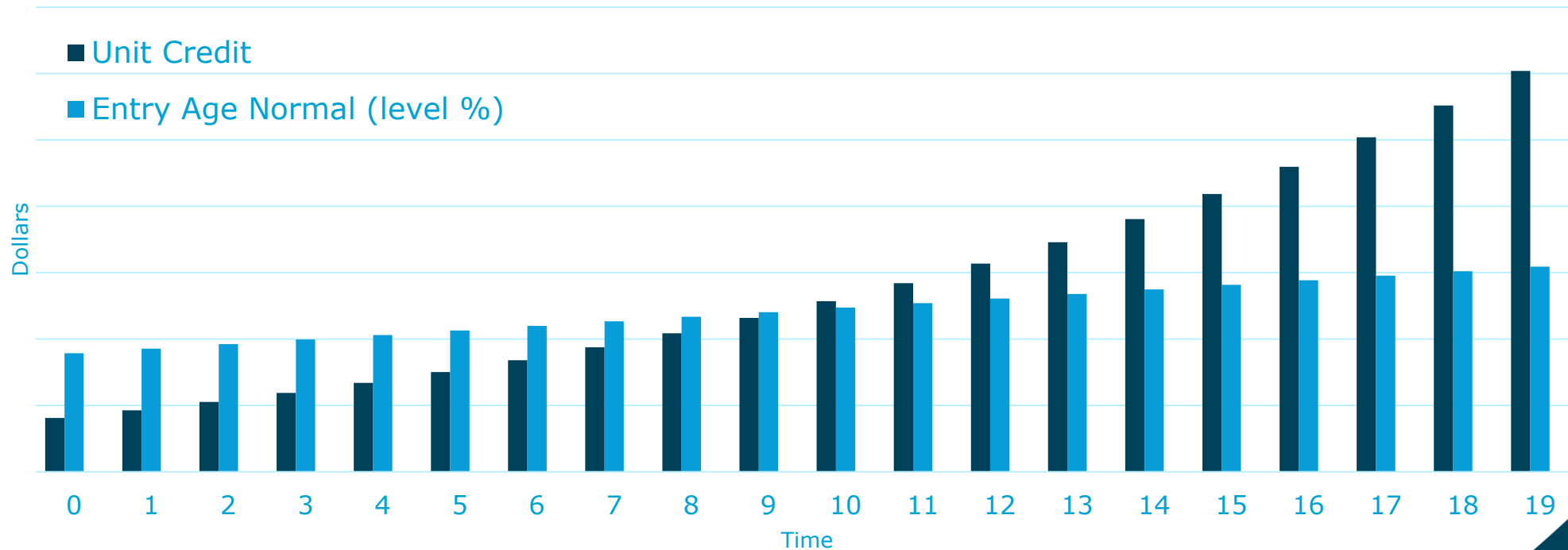


Monitor progress every year



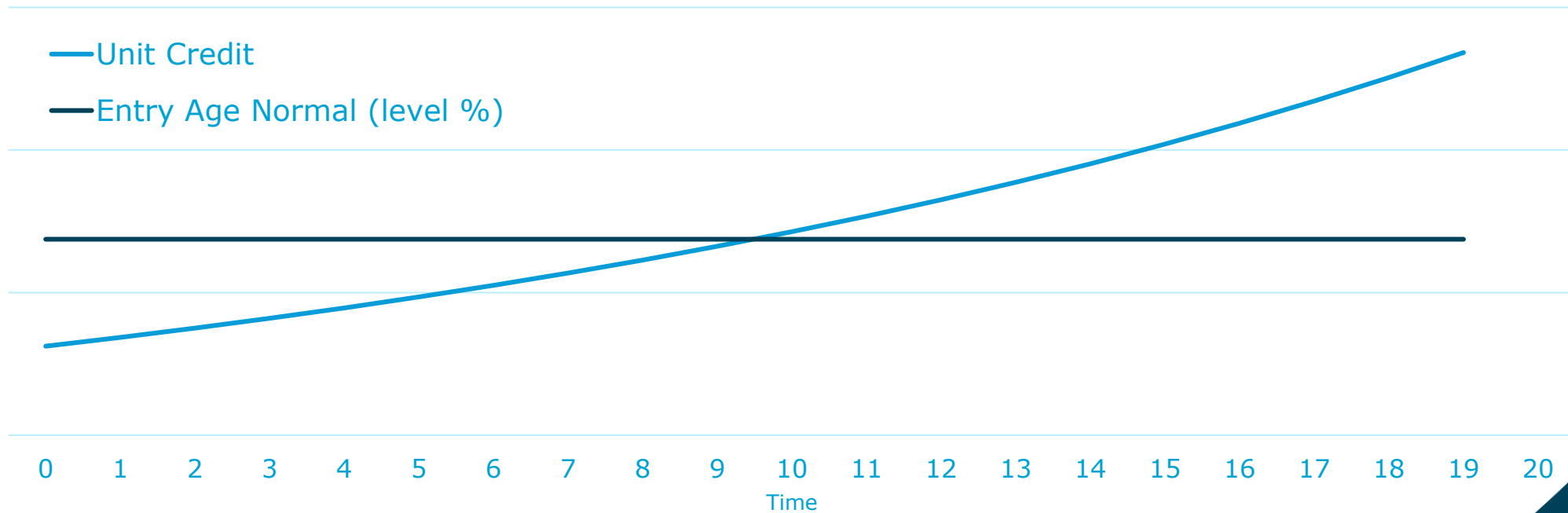
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Normal Cost (\$'s)



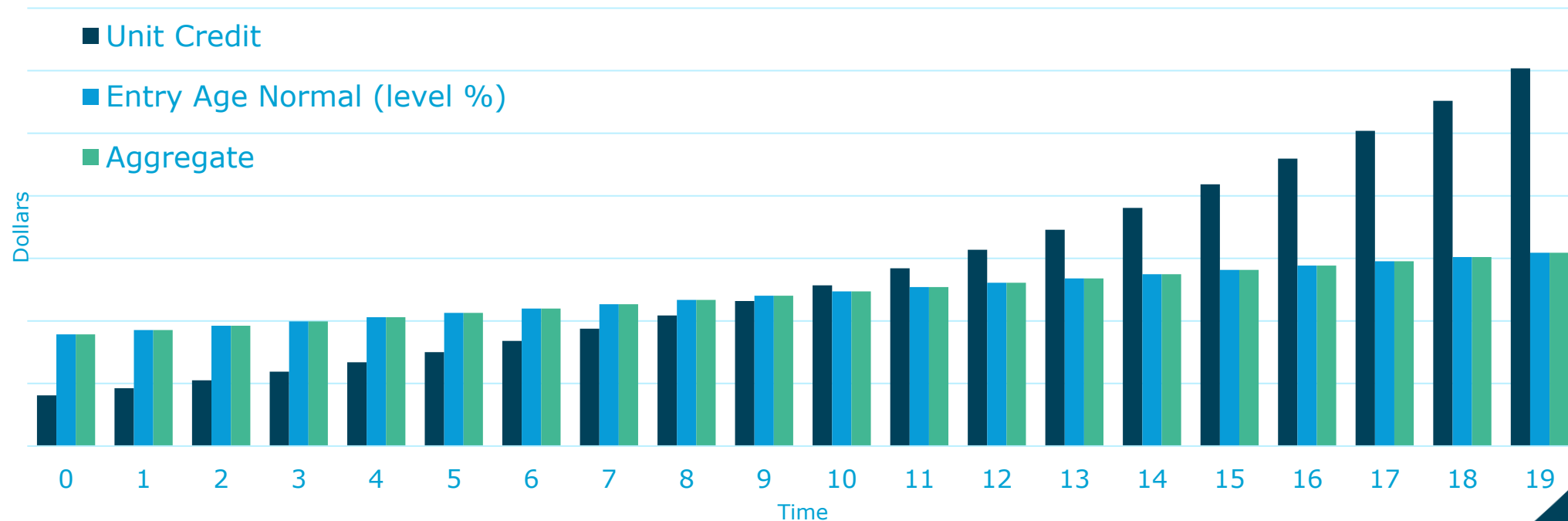
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Normal Cost as a Percent of Pay



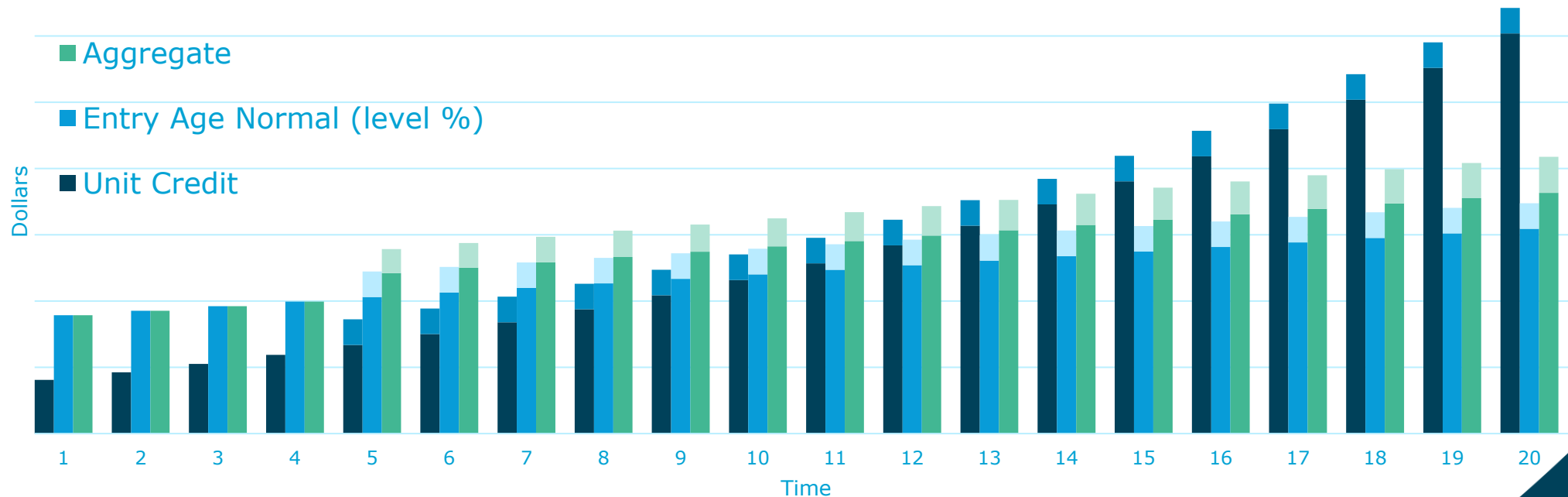
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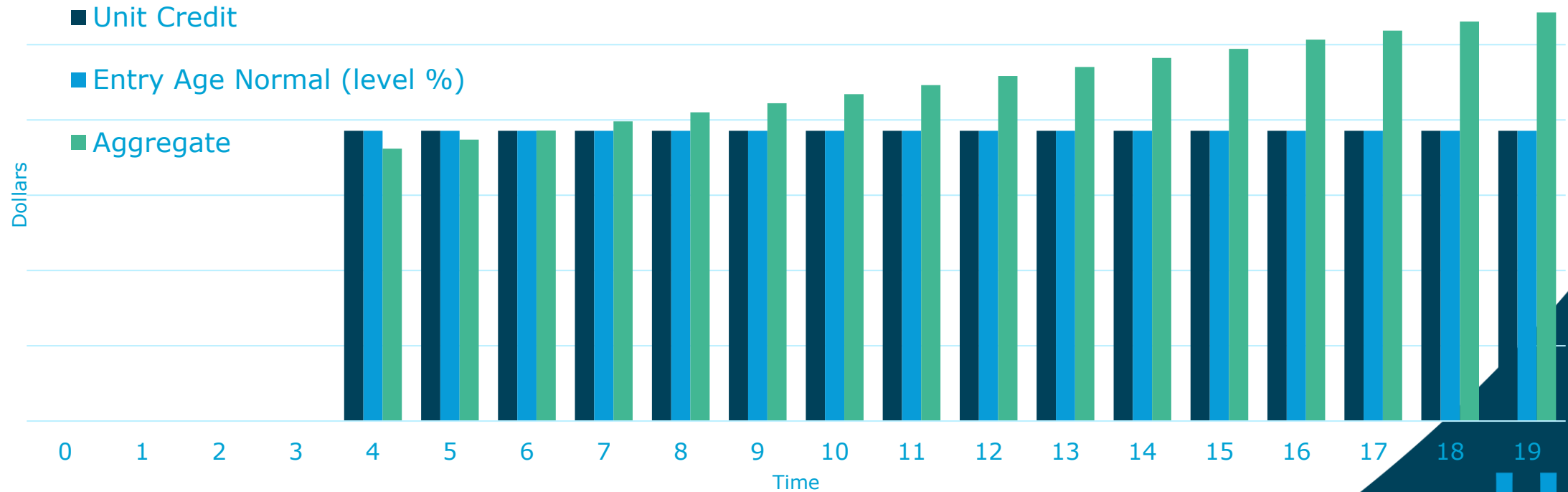
Adjust annual contribution for asset and liability experience gains or losses

Actuarially Determined Contribution (ADC \$s)
20-Year Level \$ Amortization Period



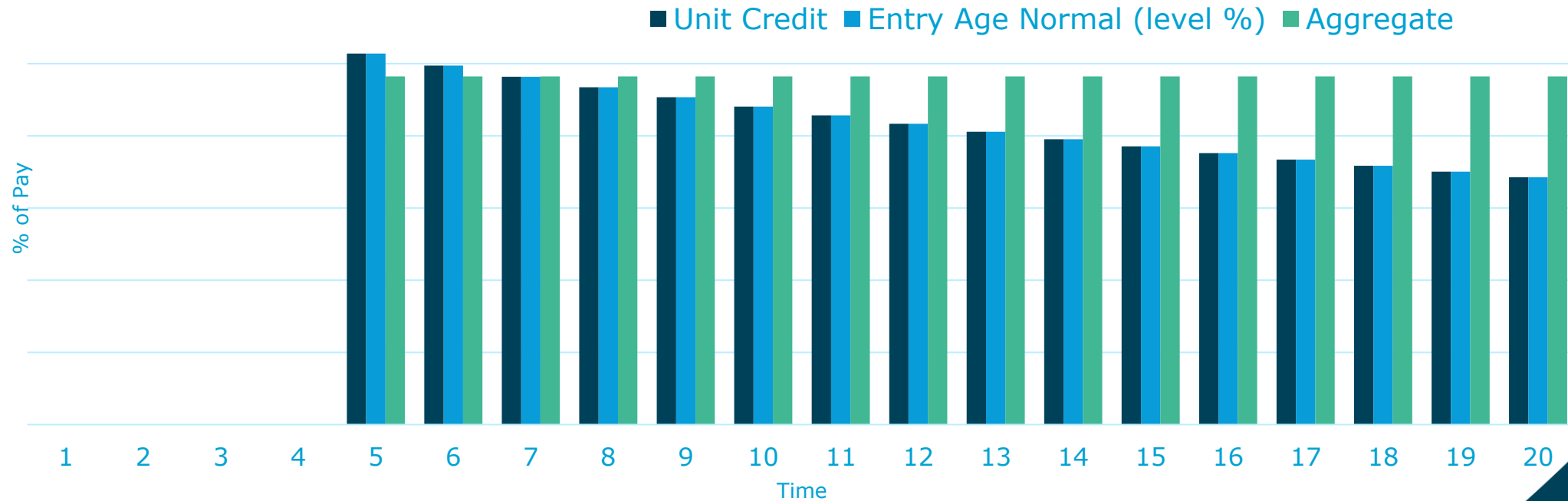
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Increase in ADC (\$'s)
20-Year Level \$ Amortization Period



Adjust annual contribution for asset and liability experience gains or losses

Increase in ADC (% of Pay)
20-Year Level \$ Amortization Period



Actuarial Funding Process

One More Time



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Cost and Amortization Methods

What to Remember



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Cost Methods

Design a plan, set annual contributions and benchmarks



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Questions?

Contact Information:

Kenneth J. "Kenny" Herbold, ASA, EA, CFA

Director of Actuarial Services

Louisiana Legislative Auditor

Phone: (225) 339-3800

Email: kherbold@lla.la.gov

<https://www.lla.la.gov>



Extras

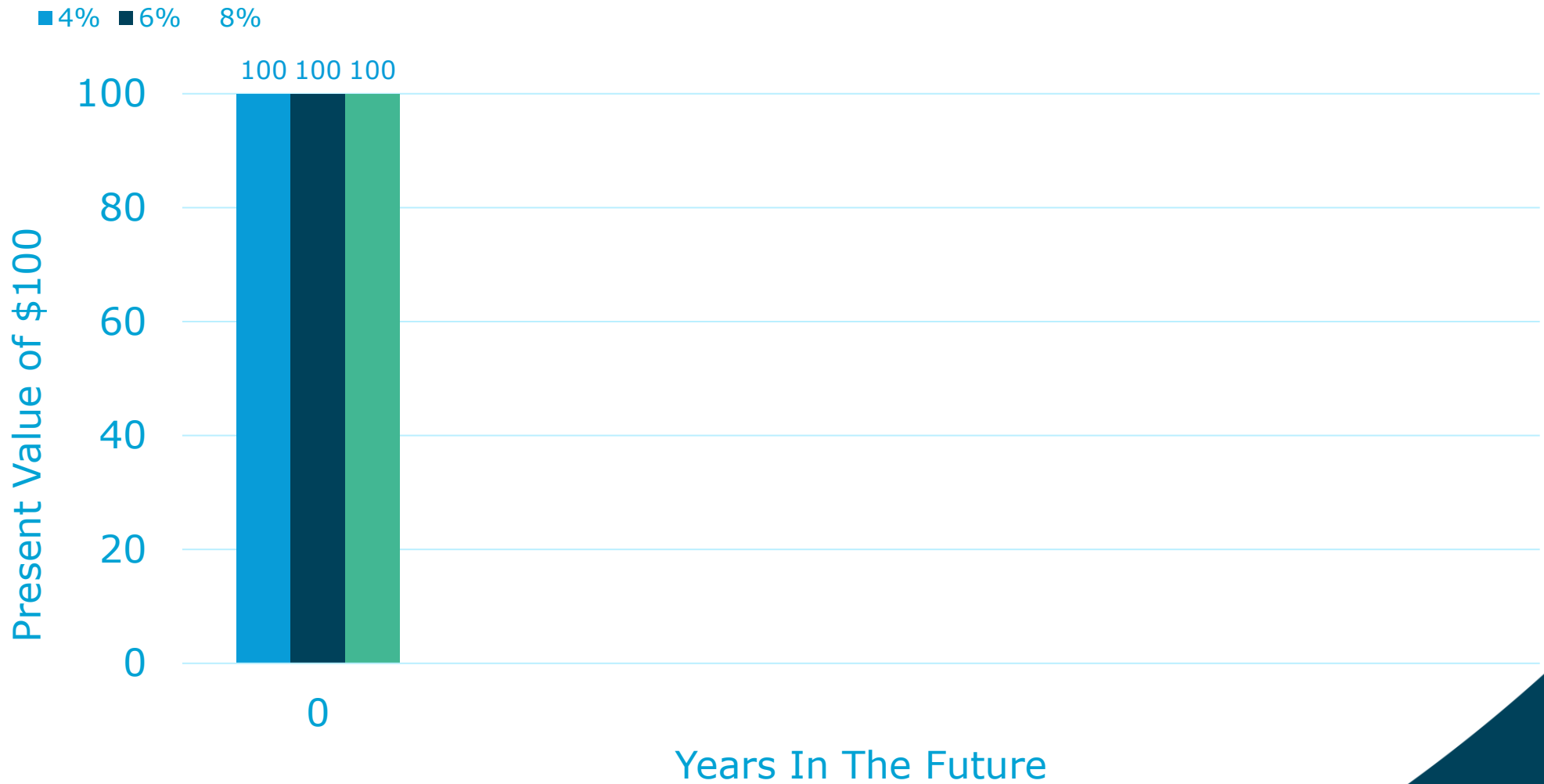
(More) Details to bore you
with because you didn't
ask enough questions



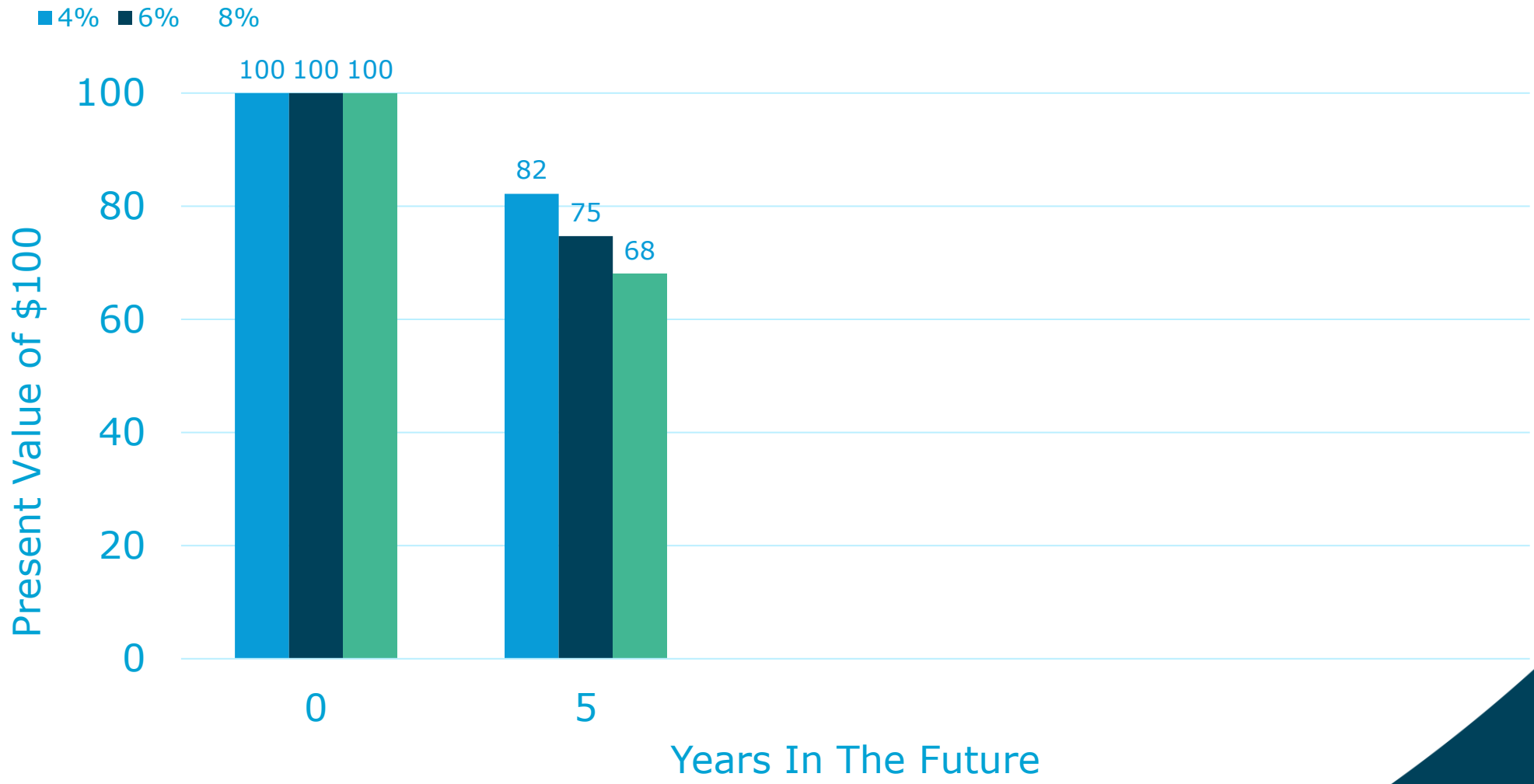
The Concept of Present Value



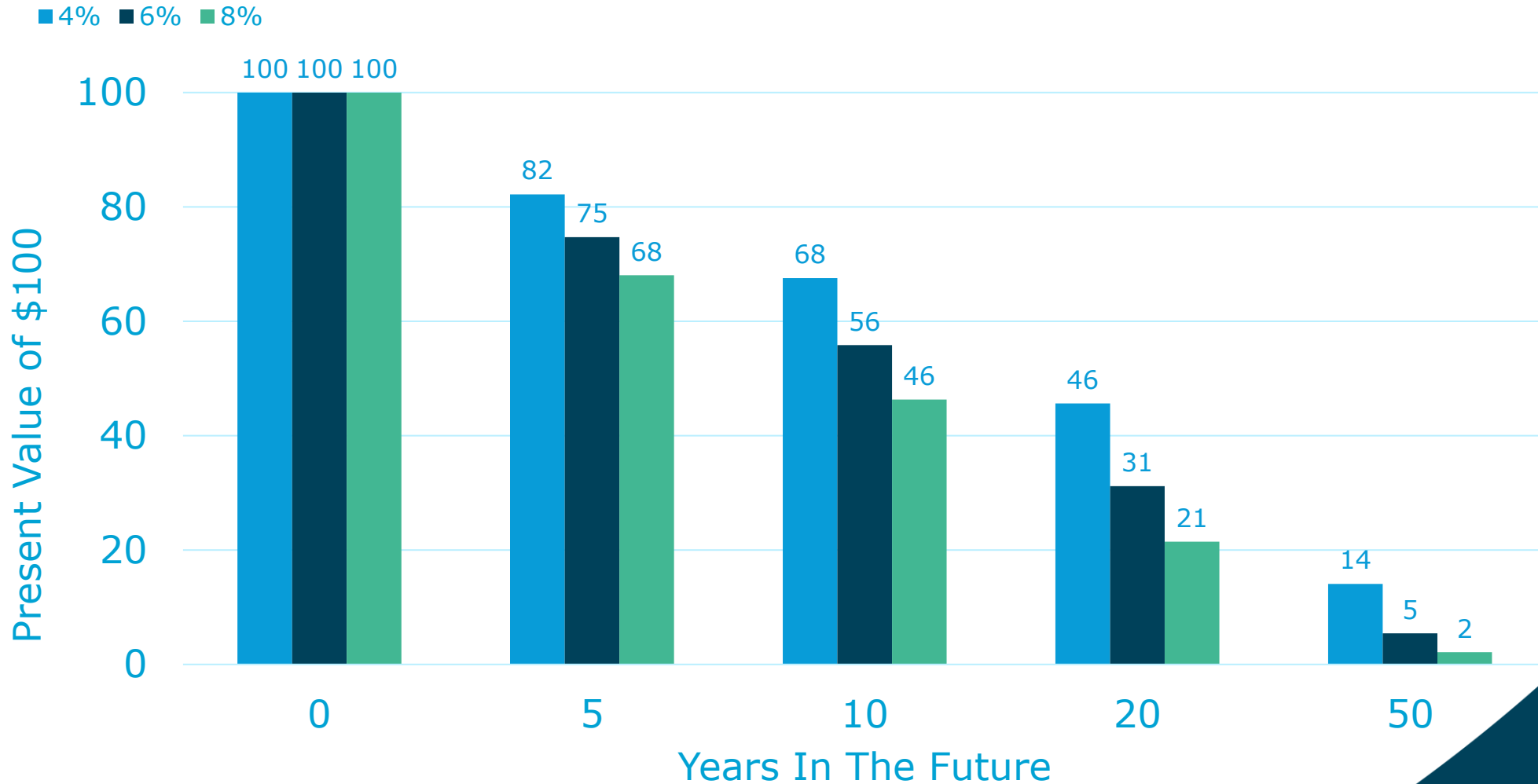
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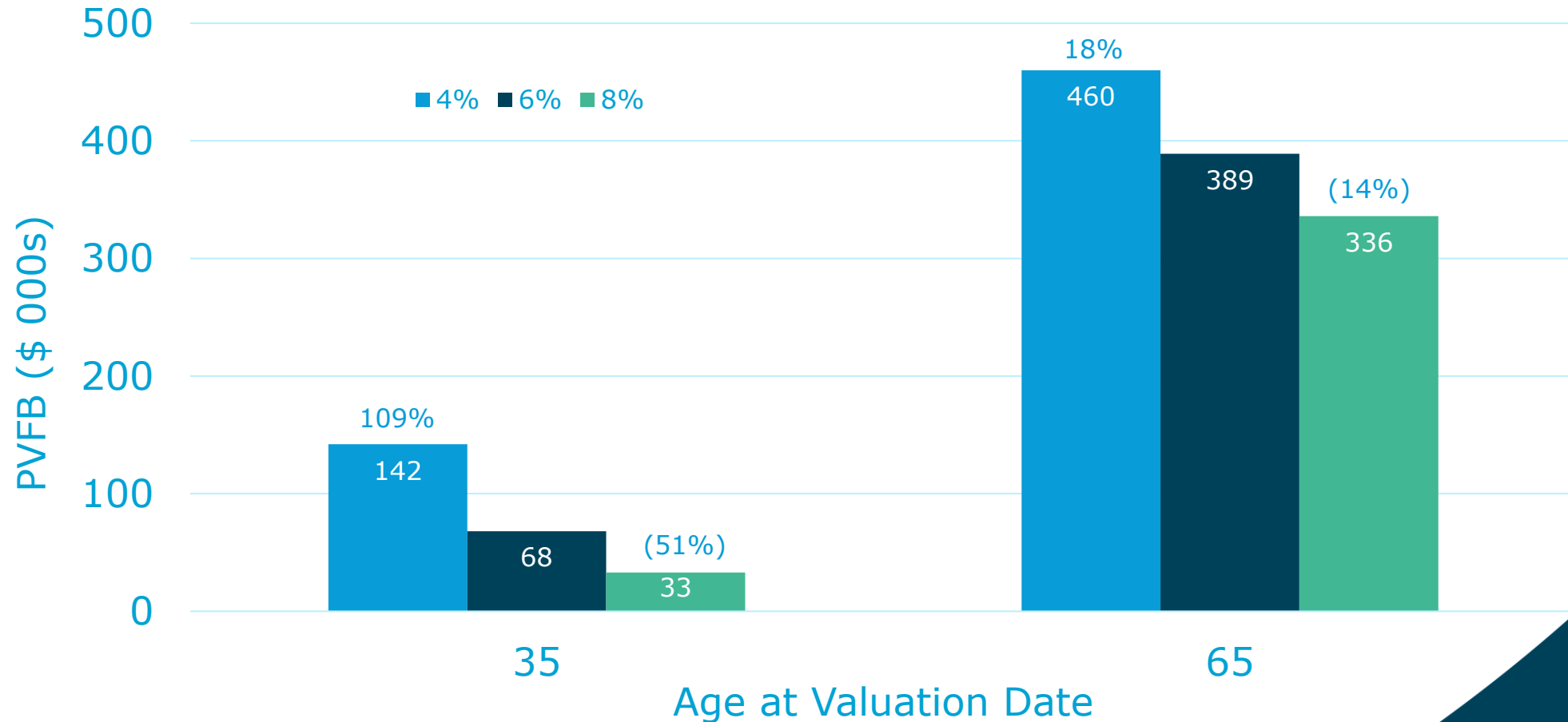
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The Concept of Present Value



Impact of Discount Rate on PVFB



Actuarial Standards of Practice

Pension Specific ASOPs

- ASOP 4 - Measuring Pension Obligations and Determining Pension Plan Costs or Contributions
- ASOP 27 - Selection of Economic Assumptions for Measuring Pension Obligations
- ASOP 35 - Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations
- ASOP 44 - Selection and Use of Asset Valuation Methods for Pension Valuations
- ASOP 51 - Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions

Recent Changes to ASOP 4

- Effective for Valuations prepared on or after, and with a valuation date on or after, February 15, 2023
- Low Default Risk Obligation Measure
 - Funding Valuations
 - Immediate Gain Method
 - The actuary should select a discount rate or discount rates derived from low-default-risk fixed income securities whose cash flows are reasonably consistent with the pattern of benefits expected to be paid in the future

Recent Changes to ASOP 4

- Amortization Methods: Fully amortize the amortization base/UAAAL within a reasonable time period or reduce the outstanding balance/UAAAL by a reasonable amount each year.

Give consideration to:

- Open vs closed
- Source
- Is it a gain or loss?
- Does it have negative amortization?

Recent Changes to ASOP 4

- Assessments of contribution allocation procedure or funding policy
 - Qualitatively assess the implications of the contribution allocation procedure or the plan's funding policy on the plan's expected future contributions and funded status (not new requirement);
 - Estimate how long before any contribution as determined by the contribution allocation procedure or the plan's funding policy is expected to exceed the normal cost, plus interest on the unfunded actuarial accrued liability, if applicable (new requirement);
 - Estimate the period over which the unfunded actuarial accrued liability, if any, is expected to be fully amortized (new requirement); and
 - Assess whether the contribution allocation procedure or funding policy is significantly inconsistent with the plan accumulating assets adequate to make benefit payments when due, and estimate the approximate time until assets are depleted (new requirement but similar to GASB "cross-over" test).

Recent Changes to ASOP 4

- Reasonable Actuarially Determined Contribution
Not needed for the majority of Louisiana plans
- Include annual gain and loss analysis

Key Demographic Assumptions

| Assumption | Description | Why It's Important | Cost Impact |
|--|--|--|--|
| Expected retirement age(s) | The age (or ages) when employees are expected to retire. | Affects the NC and AAL for active employees. | Earlier assumed retirement usually increases cost. |
| Turnover | The annual rate of employment termination of employees at various stages of their careers. | Affects the NC and AAL for active employees. | Greater assumed turnover decreases liability and cost. |
| Mortality | The probability of dying within one year at each age. | Affects the NC and AAL for active employees. | Lower mortality (living longer) increases liability and cost. |
| Disability | The probability of disablement from active employment within one year at each age. | Affects the NC and AAL for active employees. | With a high disability benefit, a high assumed rate of disability can increase liability and cost. |
| Percent Married, Spouse Age Difference, and Optional Form of Benefit Elected | Assumptions regarding the payment of a subsidized form of benefit. | Affects costs in plans where spousal survivor benefits are subsidized. | Correctly applied, these assumptions account for the cost of subsidized benefits. |

Key Economic Assumptions

| Assumption | Description | Why It's Important | Impact of <u>Higher</u> Assumptions |
|--|--|---|--|
| Discount rate(s) | The rate, or rates, used to convert expected future payments into present values. | Changes to this assumption have the largest impact on the liability calculation. | Lower liability and cost. |
| Expected rate of return on plan assets | Reflects the anticipated returns on the plan's current and, if appropriate for the measurement, future assets. | Most commonly used discount rate for public retirement systems. | Lower liability and cost. |
| Salary increases | The expected rate of future salary increases for employees at various stages of their careers. | Affects the NC and AAL for active employees. | Higher liability and cost. |
| Inflation | The expected rate at which price levels will rise, and purchasing power will fall. | A component of both rate of return on plan assets and salary increases. Also used for plans with an automatic indexed COLA. | Increases expected return of return and salary increases. For plans with an automatic indexed COLA, higher liability and cost. |