
JANUARY 11, 2016

AGENDA ITEM 01
INFORMATION ITEM

CALIFORNIA SECURE CHOICE RETIREMENT SAVINGS INVESTMENT BOARD

Presentation of Top Two Investment Options

This item will be presented verbally at the meeting.

Attachments

- Attachment #1 – Overture Financial LLC - Project Status Update

California Secure Choice

Secure Choice Retirement Savings Investment Board Meeting

Project Status Update

Sacramento, California

January 11, 2016

Agenda

I. December Status Update

Samir Kabbaj

III. Top Investment Options Discussion

Mohammad Baki and Nari Rhee

IV. Feasibility Study Results

Mohammad Baki

V. Next Steps

Samir Kabbaj

Appendix

- ✓ Detailed Pooled IRA/Reserve Fund Policy
- ✓ Expenses Drivers and Breakdown
- ✓ EDD Estimated Costs & Recordkeeping Cost Drivers
- ✓ Contributors to the Report

I. December Status Update

Samir Kabbaj

Overture Financial LLC

Status Update

- Team met with individual board members in December to clarify some of the subjects presented during the preceding Board meeting on December 7th.
- With the conclusion of today's meeting, work on the project is complete except for the Final Report.

II. *Top Investment Options Discussion*

Mohammad Baki

Overture Financial LLC

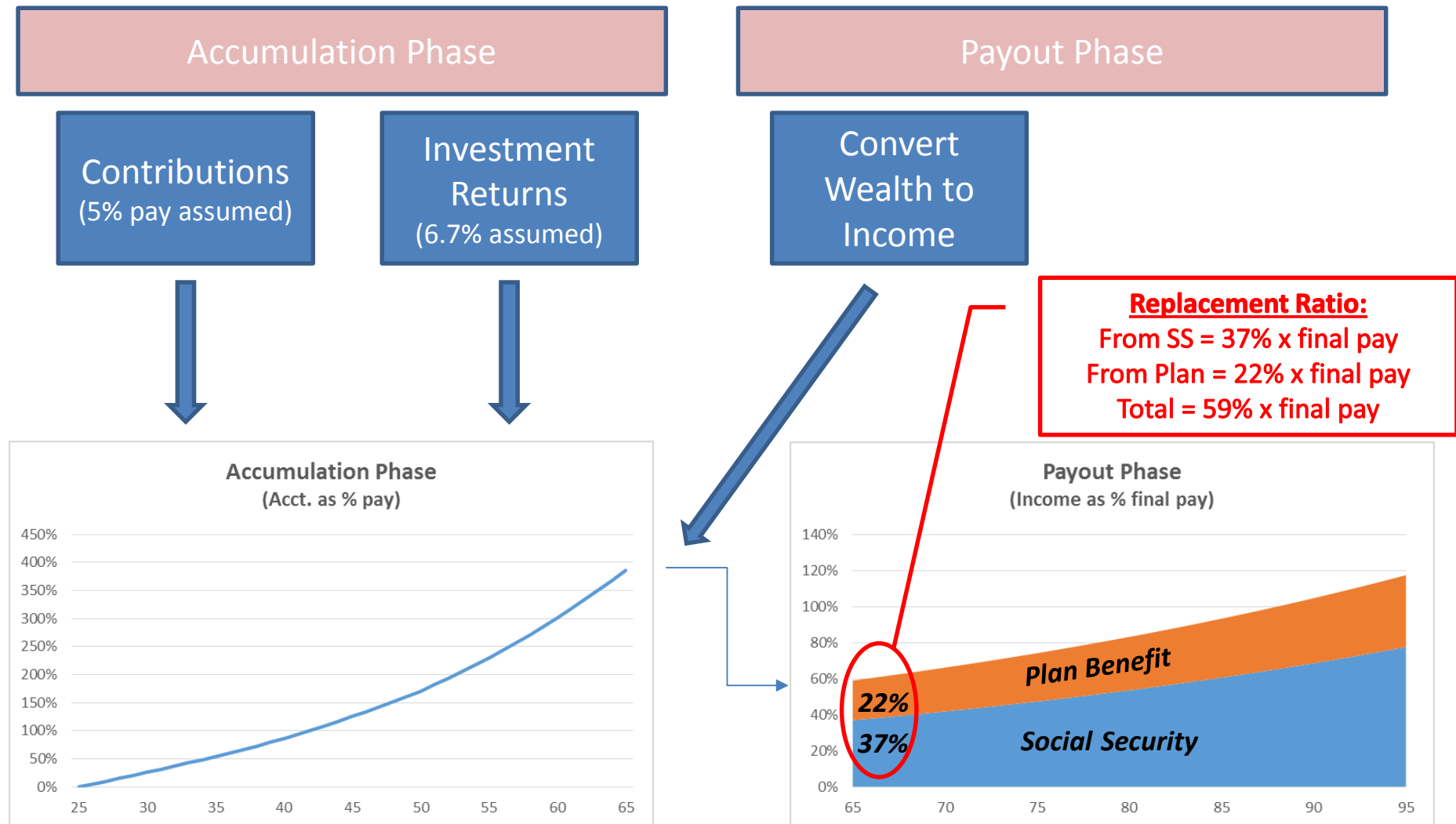
Nari Rhee

UC Berkeley Center for Labor Research and Education

- Review of Plan Design Considerations
- Retirement Plan Investment 101
- Investment Option Selection Process
- Detailed Overview of Final Two Investment Options:
 - Dynamic Asset Allocation (Managed Accounts or Target Date Fund) & Pooled IRA/Reserve Fund Model
 - ✓ Structure
 - ✓ Participant Experience
 - ✓ Board Responsibility

Retirement Program Basics

Accumulation and Payout Phases



Review: Key Considerations in Retirement Plan Design

- **Retirement Income** in a defined contribution (DC) plan is a function of **Contributions** and **Asset Allocation** (e.g., mix of stocks/bonds)

- **Key Sponsor Decisions in Any Auto-Enrollment Plan, including California Secure Choice**
 - ✓ Default contribution level and auto-escalation policy
 - ✓ Investment policy: asset allocation and risk profile
 - Sponsor responsibility for investment policy applies to both off-the-shelf products and custom/proprietary funds*
 - ✓ Default payout at retirement (lump sum, systematic withdrawal, annuity, or combo)
 - Most DC plans default into lump-sum, but this is problematic; best policy is to orient towards lifetime income.*

Program Has Time to Explore Payout Methods

- Potential payout methods
 - ✓ Lump sum distribution
 - ✓ Income stream
 - Group annuity product with insurance company
 - Structured withdrawal program (SWP)
 - In-plan collective payout option
- Annuity/income product space is in rapid development
- Initially (first 5-10 years), account balances for retirees under California Secure Choice will be too small to convert into a meaningful income stream
- Board has time to consider options before selecting a default payout method. Authorizing legislation should give the Board flexibility to determine default payout.

Retirement Plan Investment 101

➤ Investment Risk, Reward and Time

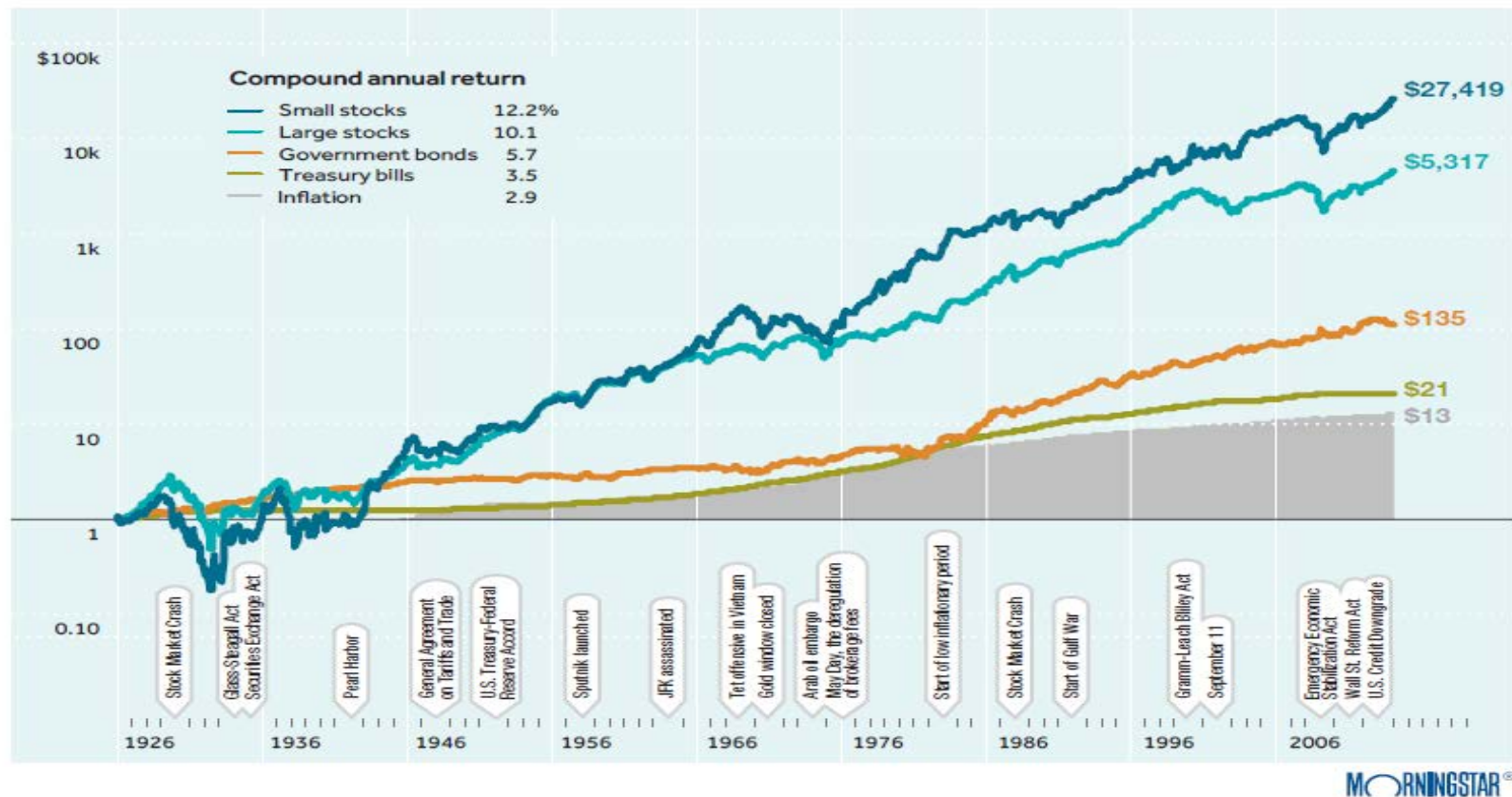
- ✓ Risk/Return on Different Asset Classes
- ✓ Short- and Long-Term Outcomes Based on Asset Allocation
- ✓ Effect of 1% Difference in Returns/Fees over Time

➤ Annuities – The Basics

Investment Risk, Reward, and Time

- **Investment risk** is the possibility of loss
- **Investment return is correlated with risk.** Historically, risky assets such as stocks generate significantly higher returns than less risky assets such as government bonds.
- **Investment risk/return varies with the time horizon** of the investment
 - ✓ **Long-term (e.g., 20+ years):** riskier investments generate higher average returns, with only a small chance of trailing behind inflation; lower risk investments yield lower returns and have a greater probability of falling behind inflation
 - ✓ **Short-term (e.g., 3-5 years):** riskier investments may experience significant drops in value, while lower risk investments tend to hold steady
- **For retirement savings, long-term outcomes are the most critical**

Risk-Return Characteristics of Various Asset Classes

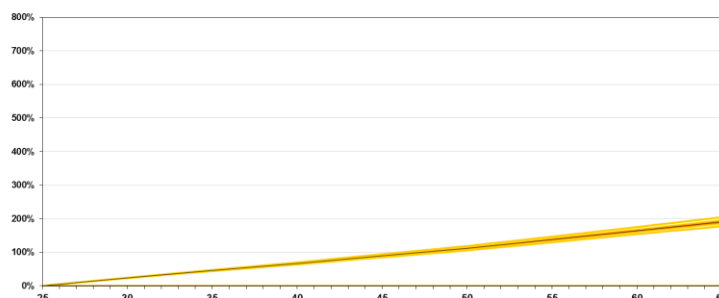


**Annual Returns and Drawdowns of Traditional Asset Classes
1926-2014**

	Inflation	Near Cash (T-Bills)	100% Bonds	50% Stocks 50% Bonds	100% Stocks
Compound Average Annual Return	2.9%	3.5%	5.7%	8.5%	10.1%
Premium Over Inflation		0.6%	2.8%	5.6%	7.2%
Lowest Annual Return	-10.3%	0.0%	-14.9%	-24.3%	-43.3%
% Negative Years	11.2%	2.2%	25.8%	21.3%	27.0%
Highest Annual Return	18.2%	14.7%	40.4%	34.6%	54.0%
% Positive Years	88.8%	97.8%	74.2%	78.7%	73.0%

Short-Term and Long-Term Outcomes Based on Asset Allocation

Money Market



Expected Value (50th %-tile)

"Best Case" Value (95th %-tile)

"Worst Case" Value (5th %-tile)

Account Value as % Pay

After 5 yrs.

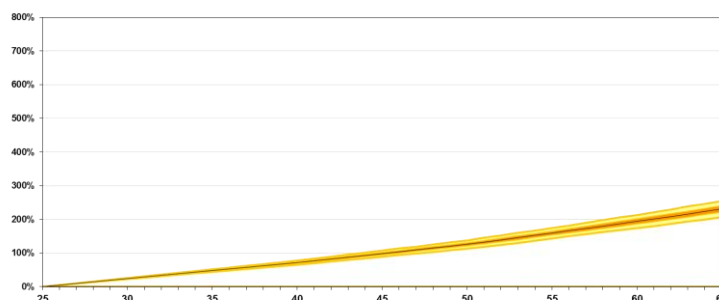
After 40 yrs.

23.7% 187.7%

24.3% 201.6%

23.0% 175.2%

100% Bonds



Expected Value (50th %-tile)

"Best Case" Value (95th %-tile)

"Worst Case" Value (5th %-tile)

Account Value as % Pay

After 5 yrs.

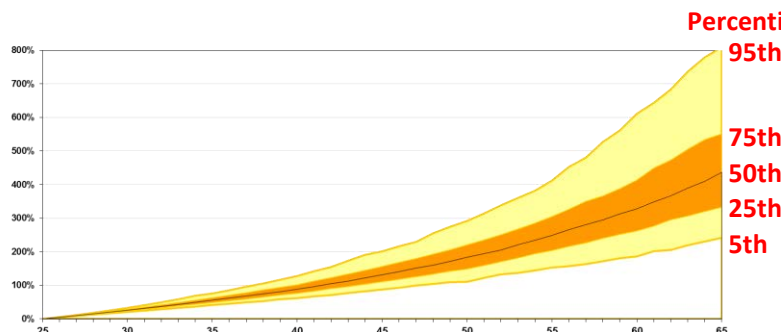
After 40 yrs.

24.3% 231.1%

25.9% 254.5%

22.6% 206.6%

70% Stocks + 30% Bonds



Percentiles:

95th

75th

50th

25th

5th

Expected Value (50th %-tile)

"Best Case" Value (95th %-tile)

"Worst Case" Value (5th %-tile)

Account Value as % Pay

After 5 yrs.

After 40 yrs.

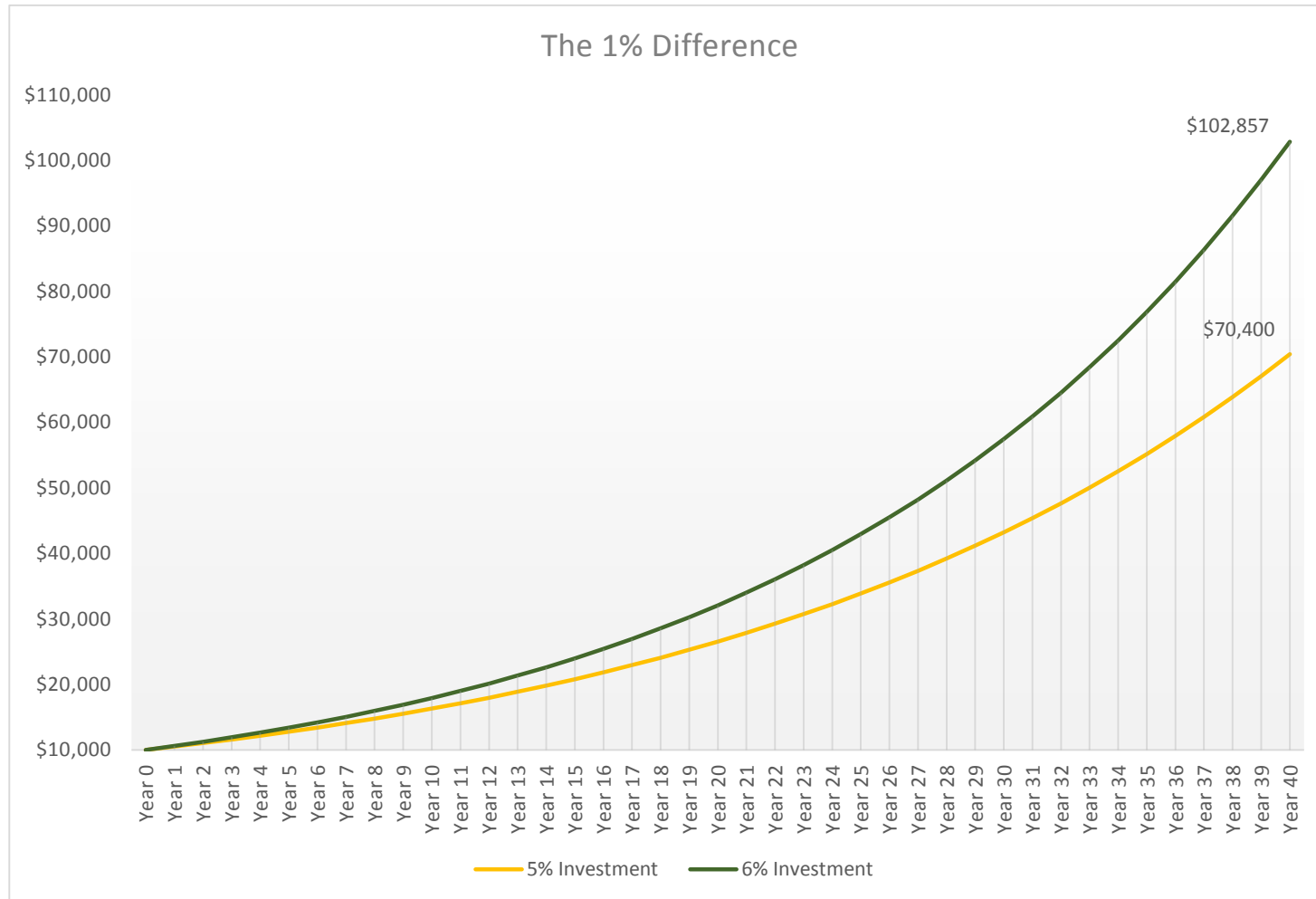
25.8% 436.7%

32.8% 809.2%

20.6% 241.6%

For retirement savings, the long-term outcomes are the most critical.

Effect of 1% Difference in Net Investment Return



- Over 40 years, an additional 1% in returns (from 5% to 6%) translates into nearly 50% higher ending balance.
- Conversely, a 1% reduction in returns through fees (from 6% to 5%) reduces the ending balance by nearly 30%.

Annuities – The Basics

- An annuity is an **insurance company contract to provide a series of payments** to the participant in exchange for a payment (premium), or series of payments.
- Accumulation vs Retirement Income
 - ✓ **Life annuities** provide guaranteed retirement income for the remainder of one's life in exchange for a lump sum payment
 - ✓ Annuities can also be used during the **accumulation phase** to guarantee returns on contributions
- Promised payments can be **fixed** or **variable**
- “Annuity” is also a generic term that includes the **income stream from a traditional pension.**
- Private annuities are more expensive than traditional pension annuities because the former generally offer lower rates of return/interest and include profits and marketing costs.

Program Investment Options

- Evaluation Process Overview
- Outcomes

Program Investment Options Evaluation Process



- The Overture team evaluated eight program investment options that represent different approaches to investment and risk
 - ✓ Asset allocation strategies (individuals bear investment risk)
 - ✓ Pooled IRA/Reserve Fund (pooled investment risk)
 - ✓ Bank deposit (FDIC insured; negligible earnings)
 - ✓ Annuities (private insurance contracts with guaranteed benefits)
- The options are representative of a broad range of market options from “plain vanilla” investments to products with stronger income focus and/or guarantee
- Each option was considered through a broad range of features and characteristics, including (but not limited to): income replacement, several dimensions of risk and administrative implications
- We have narrowed down the options to those on the next slide

Program Investment Vehicle

Top Three Options



Comparing the Final Two Default Investment Options



- Structure
- Participant Experience
- Comparing Benefits, Costs, Risks and Responsibilities

Dynamic Asset Allocation

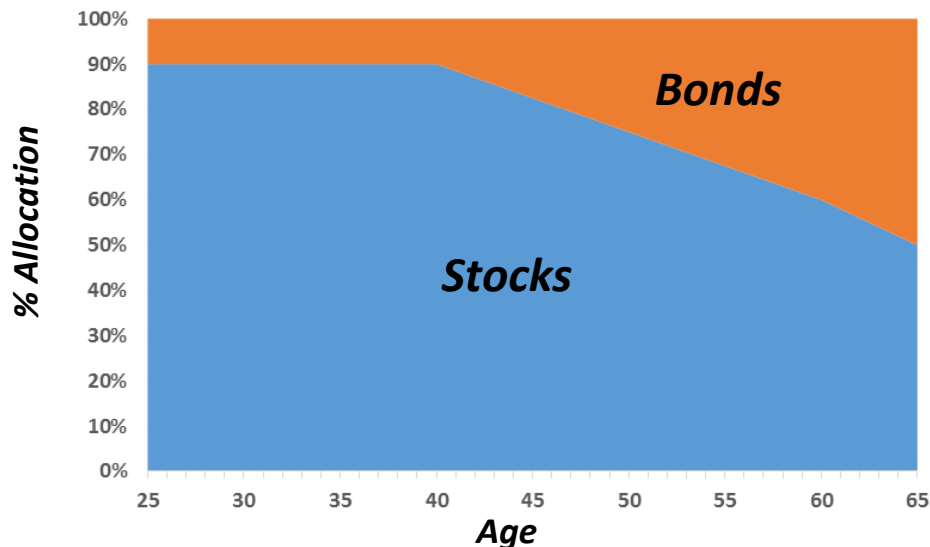
(aka Lifecycle or Target Date Approach)

- The Lifecycle/Target Date Investment Strategy
- Two ways of implementing strategy: Target Date Fund series and Managed Accounts

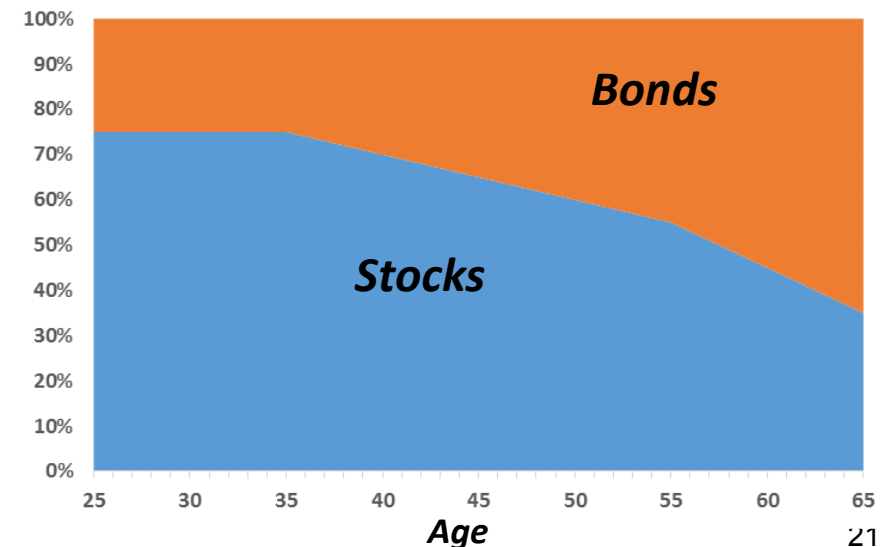
Lifecycle/Target Date Investment Strategy

- Theory: young workers have time on their side and can invest heavily in riskier, higher-return assets; near-retirees do not have that luxury.
- Lifecycle or Target Date investment strategy is designed to maximize returns and manage volatility near retirement by adjusting the asset allocation along a **declining risk trajectory** as the target retirement date approaches.
- The key design issue for this strategy is the implementation of the risk trajectory as an asset allocation glide path and whether the trajectory continues “to or through” retirement.

Typical (90 / 50)



Lower Risk (75 / 35)

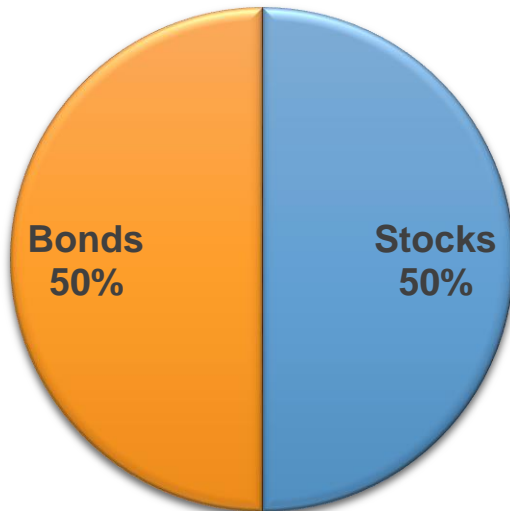


Target Date Funds (TDFs)

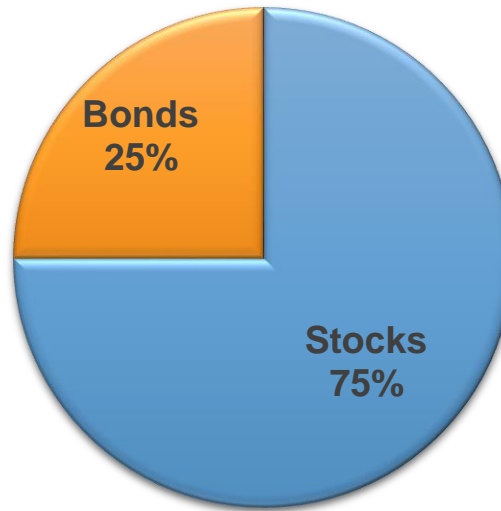
- A TDF is a mutual fund that automatically implements the lifecycle/target date investment strategy
- The Investment Manager of each TDF makes the investment decisions for the fund according to the investment policy for that fund.
- TDFs are widely used default investment options in 401k plans and are typically offered in series of 5-year retirement date intervals (e.g., “Target 2040” or “Target 2045”)
 - ✓ Participants are defaulted to the TDF that corresponds to their expected retirement age based on DOB (validated by recordkeeper). Especially popular among younger and less savvy participants.
 - ✓ The Board may also choose to offer a small menu of other investments (e.g., growth, income).

Target Date Funds (TDFs) *Continued*

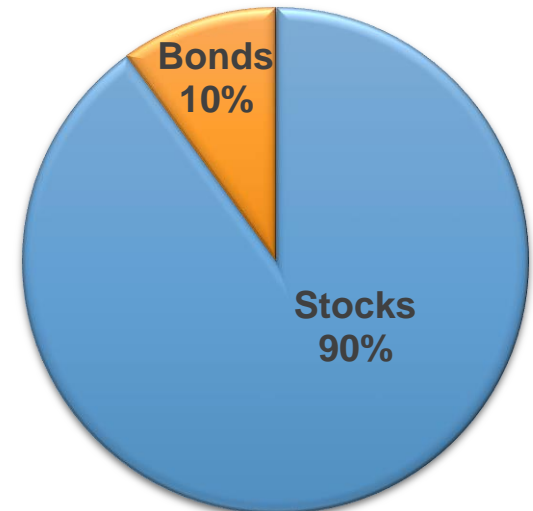
TDF 2015 Today



TDF 2030 Today



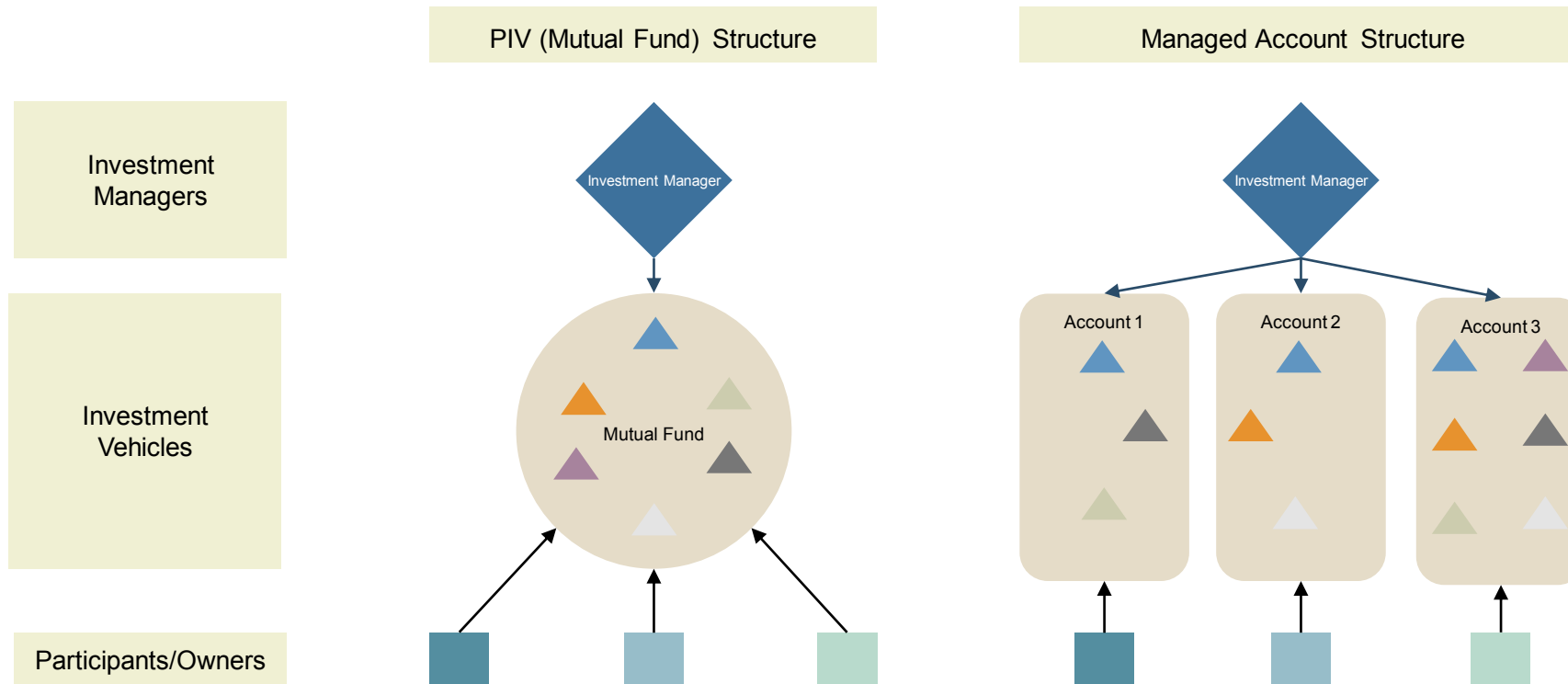
TDF 2045 Today



- A participant can choose a different TDF for a more aggressive or conservative strategy.
- Offering could include a large number of TDFs to cover all age groups and various risk profiles (e.g., conservative, moderate and aggressive versions of TDF 2030), but this is more costly.

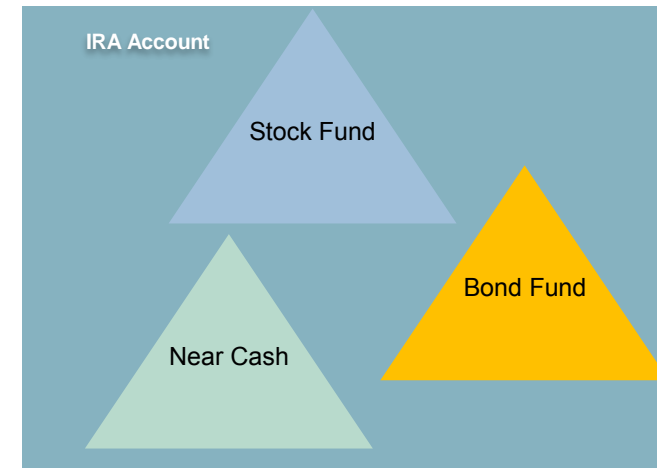
Understanding Mutual Funds vs Managed Accounts

- Pooled Investment Vehicle (e.g., Mutual Fund)
 - ✓ An **investment vehicle made up of a pool of funds** collected from many investors for the purpose of investing in stocks, bonds, money market instruments and other securities. The mutual fund is managed by an investment manager/firm.
- Managed Account (aka Individually Managed Account or Separately Managed Account)
 - ✓ An **investment account (e.g., IRA) owned by the participant but managed by a professional investment management firm**. Managed accounts differ from pooled vehicles like mutual funds in that each portfolio is specific to each participant.



Recommended Managed Account Structure

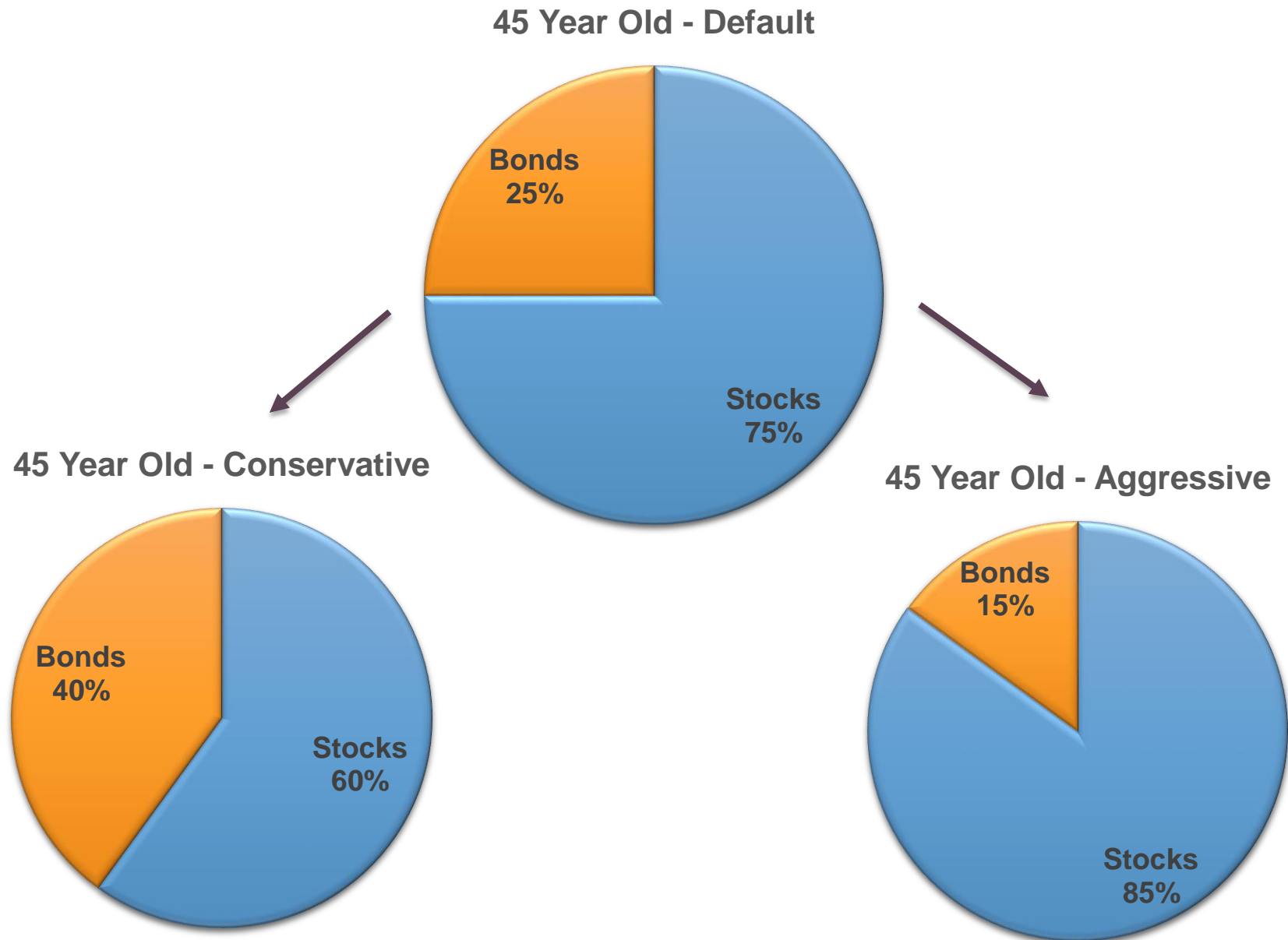
- Managed accounts can be used to build customized **asset allocation strategies using a few investment building blocks** (e.g., stock fund, bond fund, money market fund).
- This allows for greater economies of scale, as well as flexibility at the program level and participant level.
- For each account, the Investment Manager, aided by software, allocates contributions across building blocks and re-balances the portfolio according to the strategy selected for that account.
- **The Board will set the default strategy and the range of choices for participants.**
- **We recommend an initial low risk strategy for the first three years after enrollment followed by a TDF-like investment strategy** based on DOB (validated by recordkeeper), with participant choice to dial risk up or down or switch to a static low-risk/moderate/aggressive strategy.
- **Participants will not be allowed to pursue a “do it yourself” strategy under managed accounts** by picking and choosing their own investment mix.



Additional Investment Considerations: Creating Proprietary Funds

- In the managed account/TDF option, the Board can choose off-the-shelf products from the market or create proprietary funds.
- “Proprietary” here means that the funds are created for Secure Choice by the Secure Choice organization with support from investment advisor, administrator, custodian, etc.
- Cost and Fee Related Advantages
 - ✓ Enhanced ability to drive down investment management costs
 - ✓ Greater flexibility on plan revenue structure (asset-based fees vs. fixed dollar account maintenance fees). This allows program to keep expense ratios reasonable for all participants and not unduly burden startup savers.
- Even though commonplace among large DC plans, creating a proprietary fund is somewhat involved and would require that the Secure Choice organization hire a specialized consultant.

Participants Can Intuitively Dial Risk Up or Down in a Managed Account



Pooled IRA with Reserve Fund

- Background: Original Plan Design Intent in SB 1234 vs Regulatory Constraints
- Pooled IRA/Reserve Fund Model – Investment Structure and Benefit Design
- Packaging the Investment as a Retirement Savings Bond – Why and How

SB 1234 Plan Design Intent and Implementation Constraints

➤ Background: Cash Balance Plans

- ✓ Single, pooled investment fund managed by plan
 - ✓ Employer serves as guarantor (DB plan) but benefits are expressed as account balances during accumulation phase
 - ✓ To reduce risk to employer, cash balance plans are typically designed to **share risk between employers and employees (collectively)**
 - Modest interest guarantee on contributions, extra interest depending on investment performance
 - Conservatively structured plans maintain reserve
 - Ultimately less generous than traditional pension
-
- ## ➤ SB 1234 attempts to replicate the **collective risk-sharing** aspect of cash balance plans **in the DC context**, with **no employer or state backed guarantee**
- ✓ Possibility of private insurance role

SB 1234 Plan Design Intent and Implementation Constraints (*Continued*)

- Private insurance products that are similar to cash balance plans exist, but offer low returns
- We modeled the **Pooled IRA with Reserve Fund** as one way to implement collective risk pooling and return smoothing
 - ✓ Based on the Collective 401(k) concept from the Center for American Progress, developed by study team actuary Rowland Davis

How Would Pooled IRA/Reserve Fund Work?

➤ Investment Policy

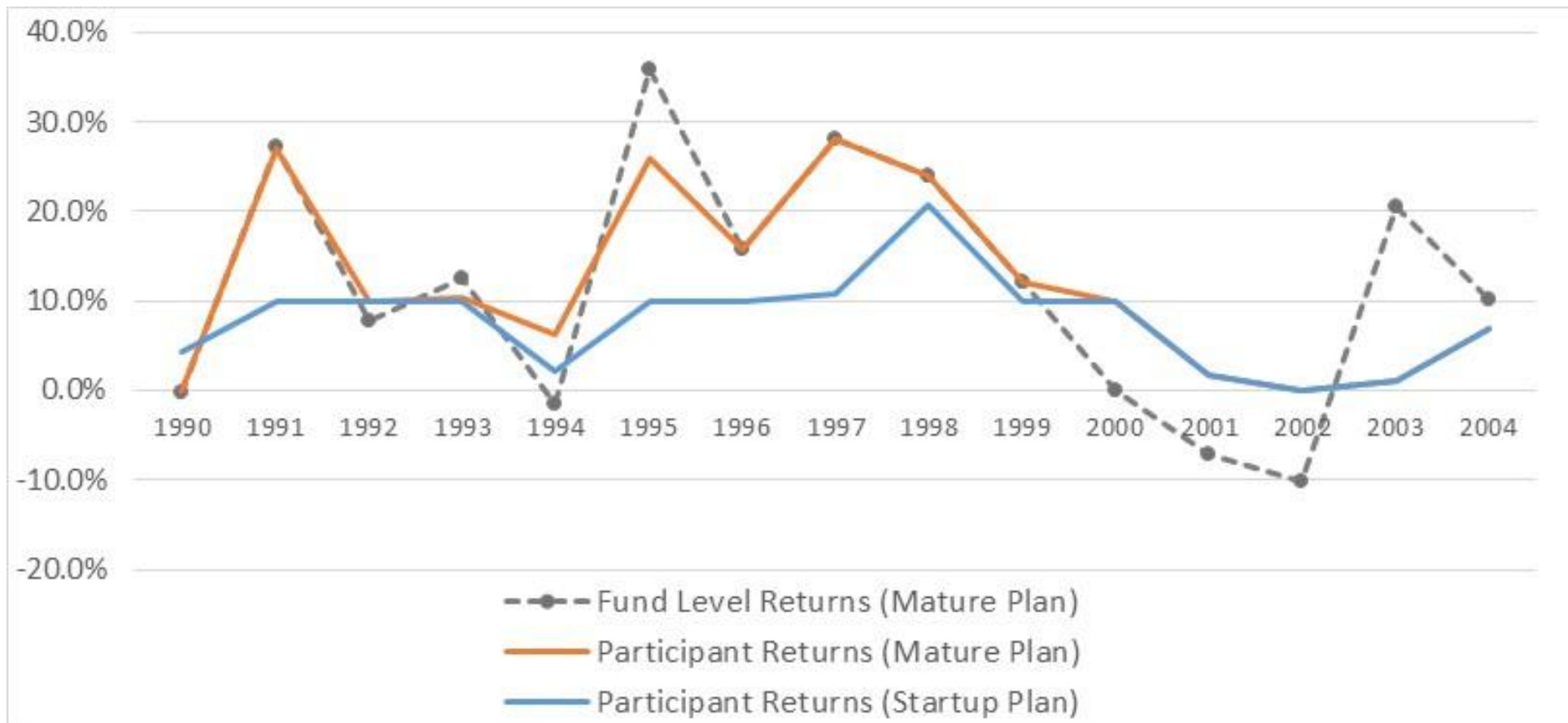
- ✓ **Single pooled investment fund** managed according to program investment policy
- ✓ We used 70% equities/30% bonds for modeling purposes. Assuming no seed capital, we recommend a more conservative investment policy (e.g., 20% Equities and 80% bonds) for the first 3 years of the program.

➤ Crediting Policy

- ✓ Interest credited based on **3-year Smoothed Return** and size of Reserves
- ✓ **Collar: 0% Floor and 10% Cap** depending on level of Reserves

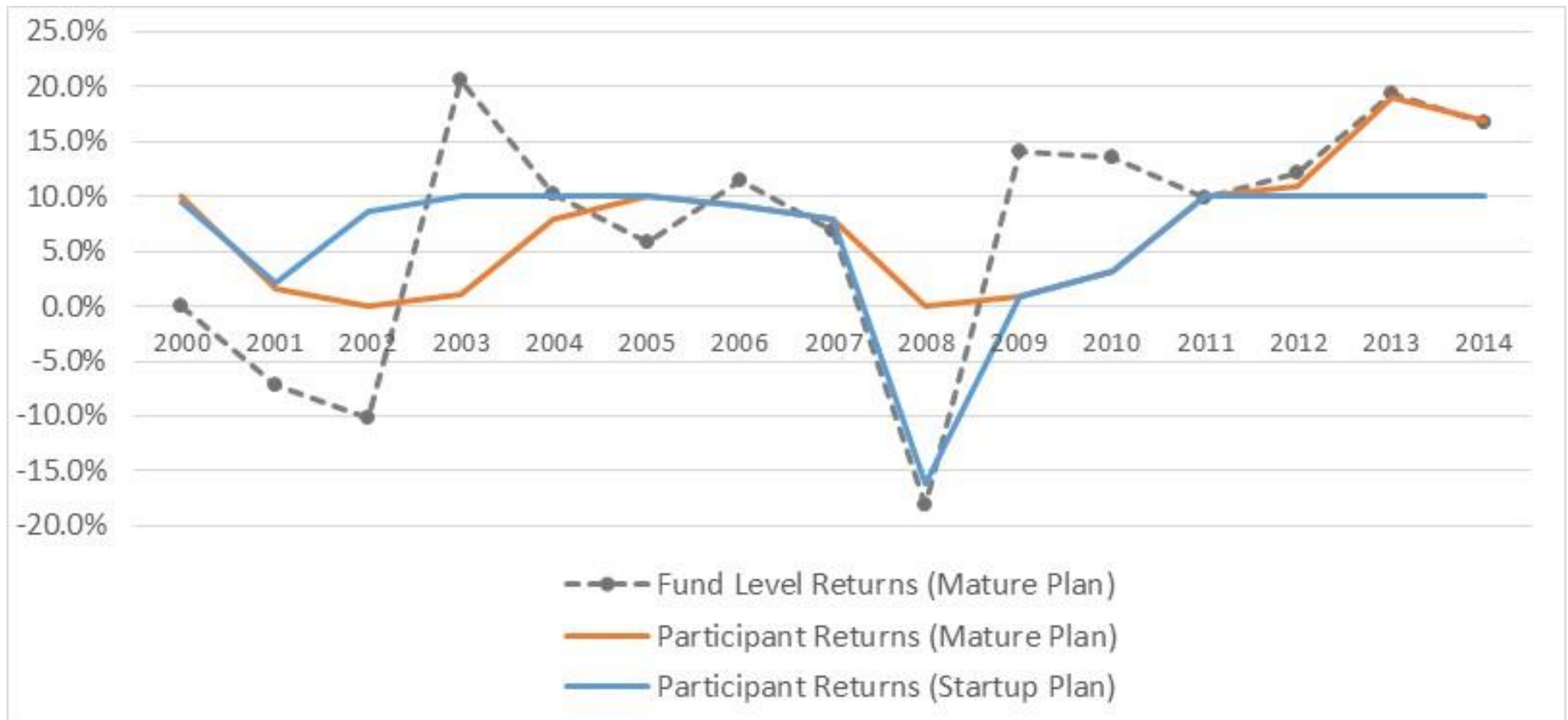
	Reserves Between 0% and 40% of Liabilities	Reserves Exceed 40% of Liabilities	No Reserves
Smoothed Return is 0-10%	Pass on full smoothed return		
Smoothed Return is Above 10%	Pass on 10% to participants. Excess goes to Reserve.	Pass on 10% plus extra credit per plan policy	Pass on 10% to participants. Excess goes to Reserve.
Smoothed Return is Negative	Use reserve to hold floor at zero if possible. Reduce account balances if reserve is insufficient. <i>Ability to “top off” accounts depends on size of reserve in relation to investment loss.</i>		

Crediting Rate Illustration: 1990-2004 Returns



- Because the late 1990s bull market would have allowed the Pooled IRA program to build up a healthy Reserves, participants would have been buffered against loss in the 2001/2002 stock market collapse, whether as a startup plan or a mature plan.
- Mature plan would have offered excess returns above collar during most years.

Crediting Rate Illustration: 2000-2014 Returns



- A startup plan would have smoothed returns during most of the 2000s, but reduced account balances during the 2008 financial crisis.
- A mature plan with a healthy reserve (40%) would have protected participants from any loss in 2008 and offered surplus interest during recovery.
- Startup plan shows higher participant returns during the early 2000s because of unusually high bond returns and conservative initial asset allocation

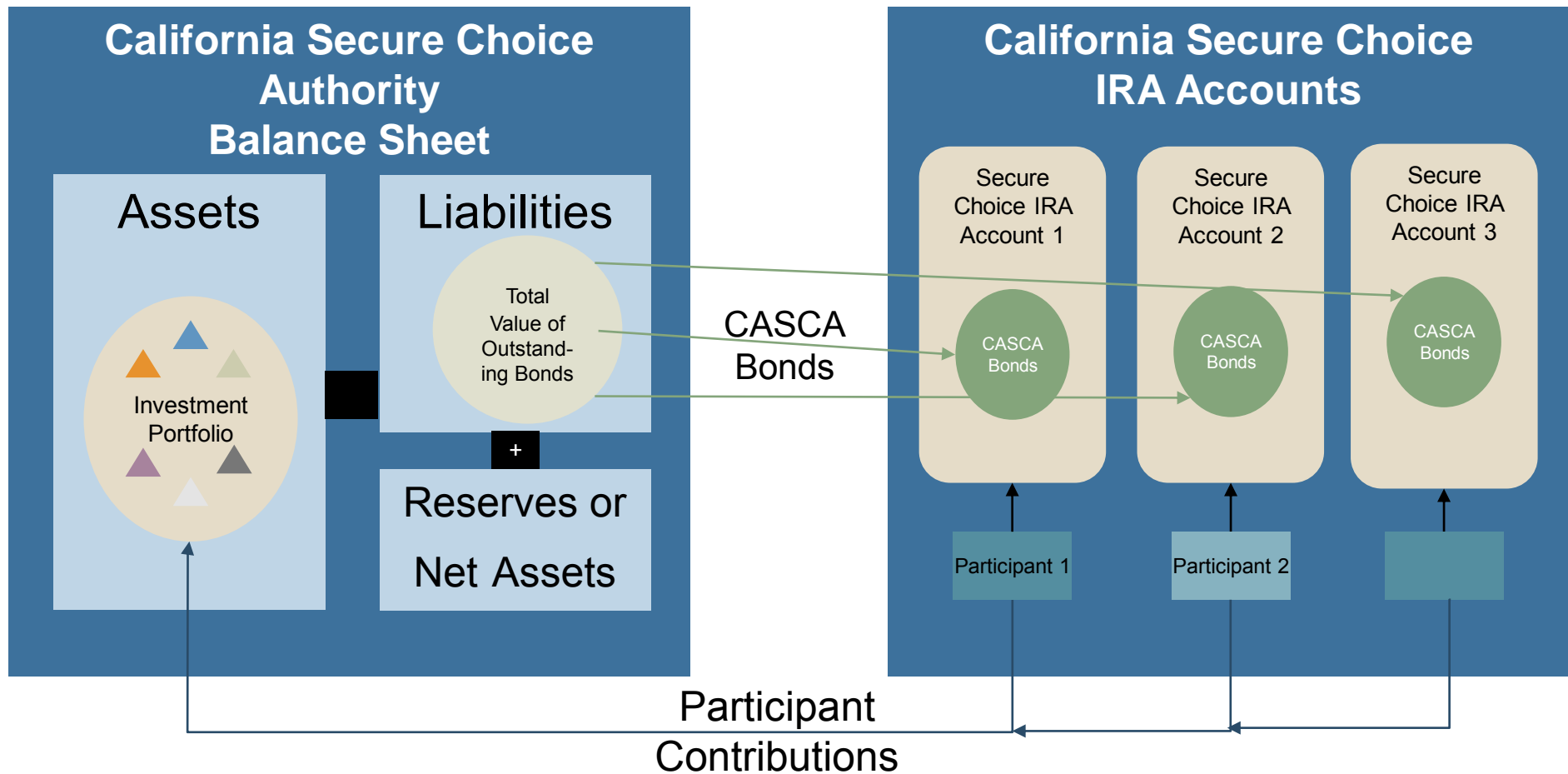
Federal Regulatory Constraints

- Structuring the Reserve Fund as envisaged in SB 1234 has two challenges
 - ✓ IRAs are typically invested in Pooled Investment Vehicles (PIVs) in the form of a mutual fund, which may require federal registration under the Investment Company Act of 1940
 - ✓ **A mutual fund cannot maintain a reserve** because net assets on the balance sheet of the PIV are owned by the shareholders/participants.

The Workaround

- A special purpose legal entity such as a statewide public authority (“California Secure Choice Authority” or “CASCA”) is established to receive all the contributions of participants
 - ✓ or an existing public authority is designated for this purpose.
- CASCA issues securities to each participant with a par value equal to their contribution at the time of contribution.
 - These securities behave like shares in a money market mutual fund but are structured as variable interest bonds to benefit from federal registration exemptions.
 - The bonds are redeemable at par value (i.e., face value).
 - The bonds would constitute the only investment in participant Secure Choice IRA accounts.
 - The Reserve Fund consists of assets in excess of the value of bonds held by participants.
- CASCA invests the assets on its balance sheet with oversight and direction by the Board, advice from investment consultants and implementation by one or more investment managers.

Illustration of Pooled IRA/Reserve Fund Structure



Plan policy is designed so that liabilities never exceed assets

Basic Trade Offs in Pooled IRA/Reserve Fund

➤ Pros

- ✓ A properly designed Reserve Fund facilitates inter-generational risk smoothing and will produce a tighter range of results with less downside risk in the long-term
- ✓ Investment is less complex as it involves the management of one portfolio (albeit with additional analysis needed for an appropriate investment strategy).
- ✓ Recordkeeping is also simpler because there is only one security owned by participants: the Secure Choice Bond.

➤ Cons

- ✓ In the early years some of the available returns will be diverted towards establishing the desired reserve level, and will not flow into credits to participants
- ✓ Legal complexity (related to the special legal entity and the issuance of bonds) and operational complexity (related to managing the entity with its staff)

Comparing Benefits, Costs, Risks & Responsibilities



- Benefits, Costs and Risks
- Investment-Related Responsibilities

Comparison of Recommended Program Investment Vehicles

Overall Features

	Dynamic Asset Allocation Auto IRA (DC)	Pooled IRA (Reserve Fund)	Traditional Pension (DB)
Income Replacement Range 5 th Percentile to Median ¹ <i>(5% contribution rate; 42-year career)</i>	13% - 23%	2058 Cohort: 12% - 22% 2078 Cohort: 15% - 30%	Function of Career Income
Who Bears Investment Risk	Participant	Participants Collectively	Sponsor
Sponsor Liability	No Guarantees by Sponsor	No Guarantees by Sponsor	Explicit Obligation to Fund Shortfalls
Fiduciary Responsibility ²	Normal Especially on Product & Default Selection ³	Elevated Fiduciary Responsibility Especially on Crediting Policy Unless Board Has No Discretion ⁴	Normal
Implementation Complexity	Low (no proprietary product) Moderate (proprietary product)	Moderate	N/A
Flexibility	Limited	Leaves Door Open to Private Investment Guarantee & In-Plan Annuity	N/A

Notes

- 1-** Nth Percentile means N% probability that result would be X% or lower. For example, there is a 5% probability that the income replacement rate for the AutoIRA option would be 13% or less. Conversely, this also means that there is a 95% probability of the income replacement rate exceeding 13%. Median means 50th percentile.
- 2-** A fiduciary duty is a legal duty to act solely in another party's interests. Parties owing this duty are called fiduciaries. The individuals to whom they owe a duty are called principals.
- 3-** The selection of investment products and, in particular, the default investments place a duty of care on the individual members of the board and program officials entrusted with making the selection.
- 4-** Members of the Reserve Fund board are likely to be deemed fiduciaries. As such they may not profit from their relationship with their principals (i.e., Secure Choice Participants) unless they have the principals' express informed consent. They also have a duty to avoid any conflicts of interest between themselves and their principals. A fiduciary duty is the strictest duty of care recognized by the US legal system. If the Board has discretion in setting the crediting rate of the Reserve Fund, then the utmost care has to be taken in avoiding conflicts of interest or favoring one group of participants over another. This burden can be mitigated if the crediting policy is strictly enshrined in legislation with little discretion left for the board.

Comparison of Recommended Program Investment Vehicles

Investment-Related Responsibilities of Board & Consultants

	Managed Accounts	Target Date Funds	Pooled IRA with Reserve Fund
Board: Overall Investment Policy	Determine asset allocation for investment lineup; adjust when prudent		Determine appropriate asset allocation for single portfolio; adjust when prudent Determine prudent policies for reserve fund accumulation and interest crediting
Board: Account Crediting	-- --		Credit accounts in strict accordance with established policies
Investment Consultants	Advise on investment/asset allocation policy, product creation/selection & vendor selection; supervise investment managers in tandem with staff		
Actuaries	Minimal - project average balances, plan demographics, retirement income		Moderate – help determine asset allocation policy, project system assets, help determine appropriate crediting policy
Legal	Oversee product creation		Draft authorizing legislation and provide legal advice to set up special purpose bond vehicle through which reserve fund can be implemented
Investment Managers	Day-to-day management of portfolio(s) in accordance with investment policy established and approved by Board		

IV. Feasibility Study Results

Mohammad Baki

Overture Financial LLC

Projection Model Overview

- Projects potential outcome scenarios over 15 years of operation
 - ✓ Number of participants
 - ✓ Cash flow: contributions, distributions, expenses, investment returns
 - ✓ Assets invested in the system
 - ✓ **Expenses as percentage of assets**
 - ✓ Funding requirements
- Input parameters that define the scenario:
 - ✓ Employee demographics and turnover (based on CPS and Greenwald survey)
 - ✓ Opt-out rate
 - ✓ Default contribution rate
 - ✓ Detailed startup/ongoing expenses for alternative operational models
 - ✓ Participant fees
 - ✓ Economic variables: inflation, wage growth and investment returns
- **Conservative assumptions used for feasibility testing purposes.** Model supports sensitivity testing and alternate scenarios
- Methodology incorporates granular actuarial, demographic, revenue and expense modules

Core Assumptions

➤ Eligible Employees

- ✓ 6.3 million employees of which 25% part-time
- ✓ Full-time annual pay rate \$45,000 with 10% between jobs and 18% annual turnover
- ✓ Part-time annual pay rate \$20,000 with 25% between jobs and 30% annual turnover

➤ Eligible Employers

- ✓ Approximately 285,000 employers of which 90% have fewer than 50 employees
- ✓ **Roll-out not to exceed 100,000 employers per year**

➤ Economic Assumptions

- ✓ Long-term inflation: 2%
- ✓ Long-term nominal wage growth: 2.5%

Baseline Scenario

➤ Participation

- ✓ **Default contribution rate: 5%**
- ✓ **Opt-out rate: 25%**

➤ Leakage

- ✓ In-service leakage rate (% of assets a year): 1%
- ✓ Percent of job leavers taking lump sum: 50%
- ✓ Total effective annual leakage from plan: 3.5%

➤ Total Fees Charged to Participants: **1% of assets**

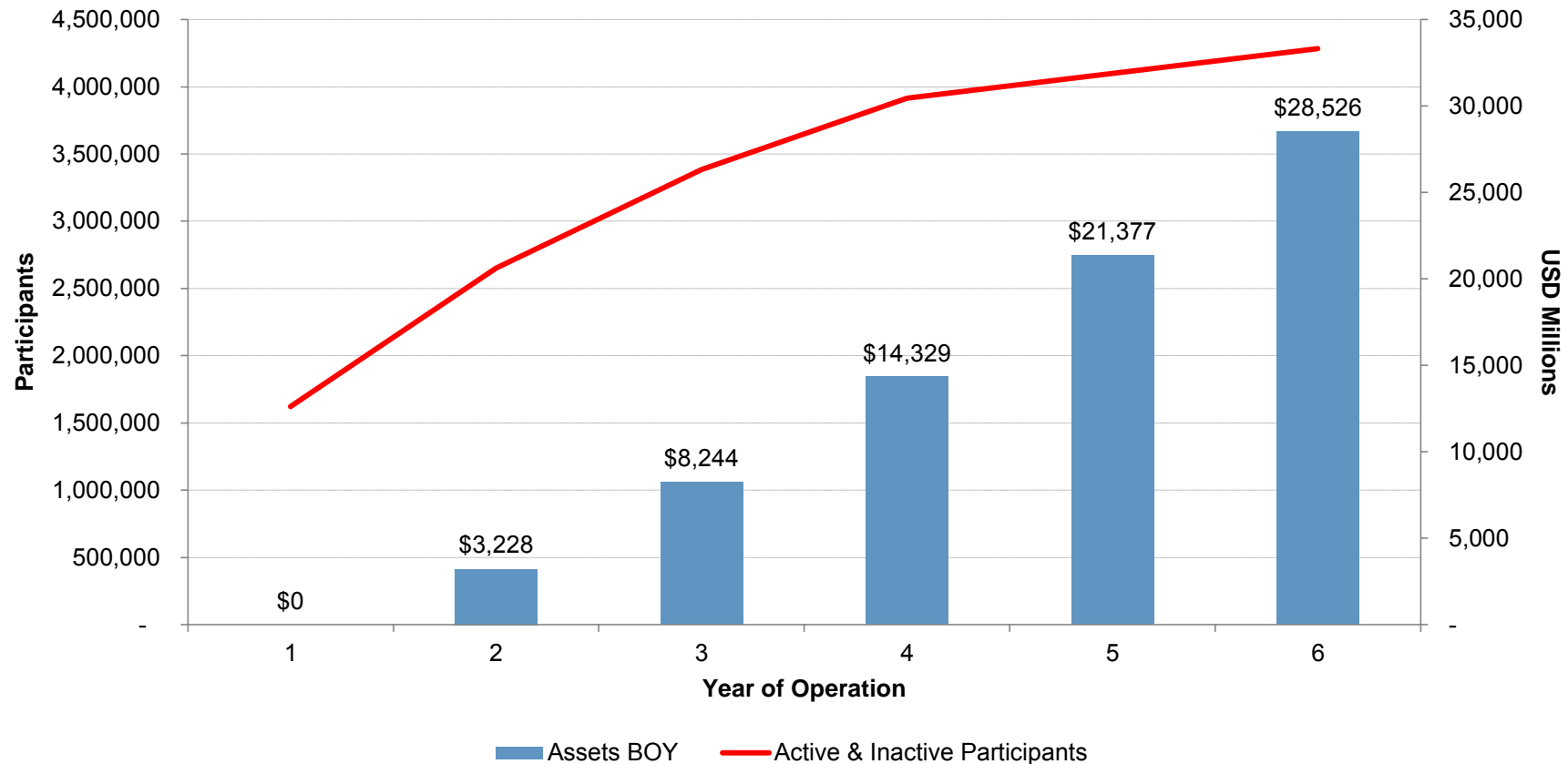
➤ Program Expenses

- ✓ Direct recordkeeper servicing model with EDD role limited to employer outreach, training and support
- ✓ Description of expense items and assumptions included in Appendix
- ✓ Does not include enforcement costs

➤ Conservative Nominal Investment Returns: **0% years 1-3, 3% thereafter**

Baseline Scenario Assets & Participants

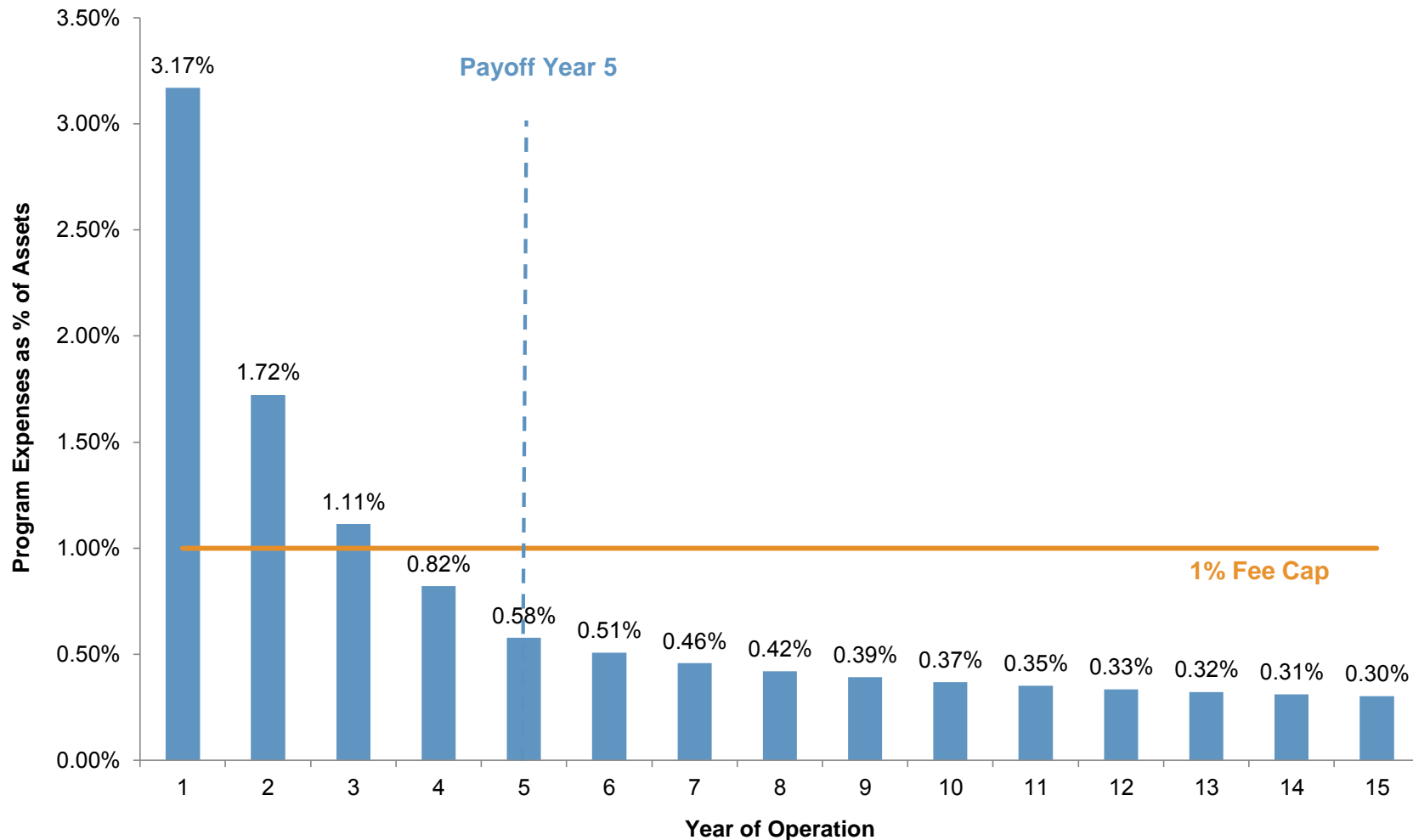
Baseline Scenario Assets and Participants



- ✓ Scale is achieved within the first year of operation
- ✓ First year enrollment only for approximately 11,000 employers with more than 100 CA employees

Baseline Scenario Expenses

Baseline Scenario Expense Ratio and Payoff Year



- ✓ Program expenses fall below the 1% cap on fees/charges to participants by Year 4
- ✓ Operating deficit during first 3 years has to be financed from future surpluses
- ✓ Funding gap paid off in Year 5 assuming funding cost of 5% per year

Financing Requirements

- Startup financing requirement for the Baseline Scenario is **USD 73M**
 - ✓ This is equivalent to the amount that the Program would have to borrow in order to cover the revenue shortfalls of the first 3 years, assuming 5% interest
 - ✓ This loan would be paid off during Year 5

- How to finance the funding gap
 - ✓ Program secures a startup **loan** or
 - ✓ Participants are initially charged **fees in excess of the 1% cap** or
 - ✓ Key **vendors fund the gap** by absorbing the operating deficit until the shortfall is paid off. (requires 5+ year contracts and vendors with significant capital wherewithal) or
 - ✓ Combination of above

- Higher participant fees reduce financing need – but shifting the startup fee structure toward account-based fees can be regressive.

Fee on Assets	Monthly Account Fee	Required Financing
1%	\$0.5	\$44 million
0.8%	\$1	\$32 million
1%	\$1	\$15 million
3%	\$0	\$0 million

Sensitivity Analysis

	Required Financing (USD Millions)	Payoff Year	Year 1 Program Expenses as % of Assets	Year 5 Program Expenses as % of Assets	Year 10 Program Expenses as % of Assets
Baseline <i>(5% Contribution; 25% opt-out)</i>	\$73	5	3.17%	0.58%	0.37%
3% Contribution Rate	\$129	7	4.78%	0.79%	0.47%
10% Opt-out Rate	\$73	5	3.02%	0.57%	0.36%
EDD Servicing Model	\$98	5	6.03%	0.56%	0.36%
Adverse Investment Returns*	\$72	5	3.17%	0.63%	0.37%
Reserve Fund Structure**	\$74	5	3.23%	0.58%	0.37%

*Sequence of Annual Investment Returns as follows: 0%,0%,-10%,-10%,5%,5%,10%,10%,0%,-15%,5%,5%,5%,5%,5%

**Incremental \$1 million in external legal startup expense

- ✓ **Financing requirements and program expense ratios are very sensitive to the default contribution rate.**
- ✓ Initial program expenses are higher under the EDD Servicing Model because of the higher startup cost estimate of \$45 million.
- ✓ The opt-out rate has a small to moderate impact below 50% because key variable costs are tied to the number of participants and the program is large in scale.
- ✓ Because the baseline model assumes that participants are defaulted to very low risk investments during first three years, the impact of adverse investment returns is only seen in later year program expense ratios.

Scenario Analysis

SCENARIO ASSUMPTIONS

	Expenses Borne by Participants	Contribution Rate	Opt out Rate	Employer Servicing Model	Investment Returns
Baseline	1% of Assets	5%	25%	Direct Recordkeeper	Conservative 1st 3 Yrs: 0%; 3% Thereafter
Pessimistic	1% of Assets	3%	30%	Direct Recordkeeper	Adverse: 0%,0%,-10%,-10%,5%,5%,10%,10%,0%,-15%,5%,5%,5%,5%,5%
Optimistic	1% of Assets	5%	10%	Direct Recordkeeper	Average 1st 3 Yrs: 0%; 6% Thereafter

SCENARIO RESULTS

	Required Financing (USD Millions)	Payoff Year	Year 1 Program Expenses as % of Assets	Year 5 Program Expenses as % of Assets	Year 10 Program Expenses as % of Assets
Baseline	\$73	5	3.17%	0.58%	0.37%
Pessimistic	\$129	8	4.88%	0.87%	0.47%
Optimistic	\$73	5	3.02%	0.56%	0.35%

- ✓ The default contribution rate is the primary driver as shown in the Sensitivity Analysis slide and explains most of the difference in results between the Baseline and Pessimistic Scenarios
- ✓ The Optimistic Scenario is close to the Baseline Scenario because it has the same contribution rate

V. Next Steps

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Next Steps

- The team is working on the Final Report.
- We expect to have a draft version in mid-January with a final version to be delivered at the end of January.

Appendix

- ✓ Detailed Pooled IRA policies
- ✓ Expenses Drivers and Breakdown
- ✓ EDD Estimated Costs & Recordkeeping Cost Drivers
- ✓ Contributors to the Report

Detailed Pooled IRA/Reserve Fund Policy

➤ Investment and Redemption Policies

- ✓ All proceeds from investor contributions are invested in one portfolio. The reserve component is also part of that portfolio. Gains are also reinvested.
- ✓ Shares/bonds can be redeemed for cash at par value for distributions at retirement and other approved events.
- ✓ It is still an open issue whether shares can be locked up based on the latest DOL proposed regulations. This issue is being addressed through a Board letter to SCRIB. If shares cannot be locked up, then CASCA's investments have to remain largely liquid.
- ✓ For modeling purposes, a 70% allocation to equities and a 30% allocation to bonds is used. If the Reserve Fund starts with no reserves (i.e., no seed capital) at launch, then we recommend a more conservative investment policy (e.g., 20% Equities and 80% bonds) for the first 3 years of the program.

➤ Crediting Policy

- ✓ Definitions:
 - Smoothed Return: average of the current year-end return and previous two-year returns of the CASCA portfolio.
 - Collar: 0% Floor and 10% Cap
 - Funded Ratio = Total CASCA Assets/Total Par Value of Outstanding Bonds (i.e., CASCA Assets/CASCA Liabilities)
- ✓ Crediting Rules Used in Modeling:
 - If Funded Ratio $\geq 100\%$ and $\leq 140\%$, then credit participant accounts with the Smoothed Return subject to the Collar. For example, if the Smoothed Return is 15%, then participants are credited the Cap of 10% and the excess is credited to the CASCA Reserve. On the other hand, if the Smoothed Return is -3%, then participant accounts are credited the Floor or 0%, the par value of the bonds remains unchanged and the deficit is debited from the CASCA Reserve. Finally if the Smoothed Return is within the Collar, then participants are credited the Smoothed Return.
 - If the Funded Ratio exceeds 140%, then a bonus credit ranging from +2% to +25% is added depending on the Funded Ratio percentage.
 - If the Funded Ratio falls below 100%, then the par value of the CASCA bonds is adjusted downwards to bring back the Fund Ratio to 100%. This is equivalent to a negative credit

➤ Basic Trade Offs

- ✓ On the positive side, a properly designed Reserve Fund with inter-generational risk smoothing will produce a tighter range of results with less downside risk in the long-term
- ✓ On the negative side, in the early years some of the available returns will be diverted towards establishing the desired reserve level, and will not flow into credits to participants

Expense Drivers and Breakdown

Expense Items	Real Growth Rate	Year 1 USD Millions	Year 1 Percent of Assets	Comment
Internal Staff	10%	\$3		Based on CA Savings Plus + 20%
Board Expenses	10%	\$0.20		Includes fiduciary insurance
External Legal Services		\$0.50		Goes down to \$250,000 after Year 1
OE&E	10%	\$3		Based on CA Savings Plus + 20%
Investment Consultants		\$0.35		Goes down to \$250,000 after Year 1
Investment Management			0.18%	
Custodian/Trustee Services			0.01%	
Non-Recordkeeping Startup Costs		\$0.75		For two years. Yr 1: System Architecture and RFP. Yr 2: Project Management
Recordkeeping and EDD				See next slide

- ✓ The Real Growth Rate column indicates the rate at which the line item will be increased every year (in addition to the inflationary adjustment described below).
- ✓ After Year 5, flat (i.e., non-percent) expense items are increased by 1.5% (i.e., 0.5% less than inflation assumption) every year.
- ✓ Enforcement costs are not included.

EDD Est. Costs & Recordkeeping Cost Drivers

Recordkeeping Cost Drivers

Annual Cost Drivers	EDD Servicing Model	Direct Servicing Model
Flat Amount (Current USD)	\$600,000	\$800,000
Per New Employer	\$120	\$240
Per Existing (Non-New) Employer	\$120	\$150
Per Participant	\$17	\$20

EDD Cost Estimates

Cost Item	EDD Servicing Model EDD acts as Intermediary between Recordkeeper and Employers and Performs Employer Outreach, Support and Training Functions		Direct Serving Model EDD Only Performs Employer Outreach, Support and Training Functions	
	Startup	Ongoing	Startup	Ongoing
Systems*	\$42,000,000	\$5,000,000		
Legal		\$150,000		
Marketing	\$800,000	\$400,000	\$800,000	\$400,000
Contribution Processing	\$700,000	\$1,800,000		
Call Center	\$1,200,000	\$700,000	\$1,200,000	\$700,000
Reserve	\$300,000	\$1,950,000	\$100,000	\$300,000
Total	\$45,000,000	\$10,000,000	\$2,100,000	\$1,400,000

*Assumes leveraging and upgrading of existing EDD ACES system. A new dedicated stand-alone system is estimated to cost \$28 million more.

- ✓ The recordkeeping cost drivers are based on the operational workflows presented in the October SCIB meeting and are derived from a proprietary model to be provided under separate cover.
- ✓ EDD data are derived from functional cost estimates provided by the department for the EDD Serving Model, with the following adjustments: exclusion of compliance auditing costs, reduction of legal costs to be consistent with our research, and an additional 20% buffer in the Reserve line item.

Contributors to the Report

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