RETIREMENT UNITS PLAN

Asset Driven Defined Benefit Liabilities

- Providing participants a basic retirement annuity benefit
- Relieving sponsors of investment and interest rate risk stabilizing defined benefit expenses and contributions
- Giving participants portability of defined benefits
- Adjusting participant's defined benefit purchasing power (inflation)
- Being considered by government plans (State of Wisconsin considering a variation of this design)
- Cash balance (Hybrid Plans) plans are the fastest growing of the defined benefit pension plans and could overtake 401(k) plans within the next few years *(The Wall Street Journal)*
- Encouraging options to annuitizations (House Ways & Means Committee on Options for Increased Retirement Security)

PROBLEMS ADDRESSED BY THE RETIREMENT UNITS PLAN (RUP)

- The “Retirement Crisis” where one in two Americans report that they can't save enough
- Many of the 51 million people who have 401(k) plans simply don't understand how to size them up and make smart investing choices *(Forbes)*
- Defined contribution plans that make the participant the sole decision maker for the four factors that determine an employee's ability to retire successfully:
  - contribution rate,
  - investment strategy/return,
  - time horizon, and
  - spending needs in retirement.
- These critical elements were transitioned from sophisticated pension committees and diligent plan sponsors, to participants that in many cases lack the expertise, tools, or time to manage them effectively.
- RUP education provides stepping stool to defined contribution plan education by recasting the contribution rate in the equation

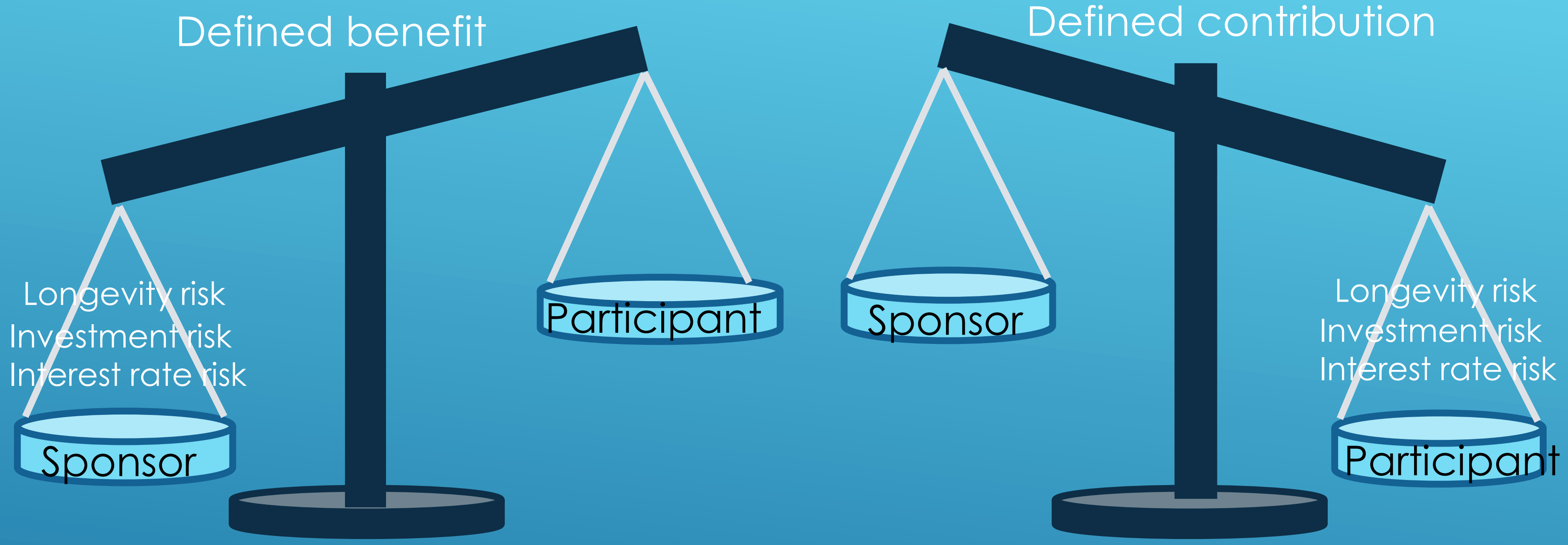
PROBLEMS ADDRESSED BY THE RETIREMENT UNITS PLAN (RUP)

- Allowed since a1953 Revenue Ruling: "which provides benefits that vary with the increase or decrease in the market value of the assets from which such benefits are payable satisfies the Internal Revenue Code 's requirement that defined benefit plans provide "definitely determinable benefits"

- Existing RUPs
  - Aerospace Corporation in El Segundo, CA
  - Major League Baseball Players Association
  - TIAA-CREF has used this concept for years
  - Some universities that have variations of these plans

There are more, but we have yet to find a way to find them.

RUPS HAVE BEEN AROUND FOR YEARS



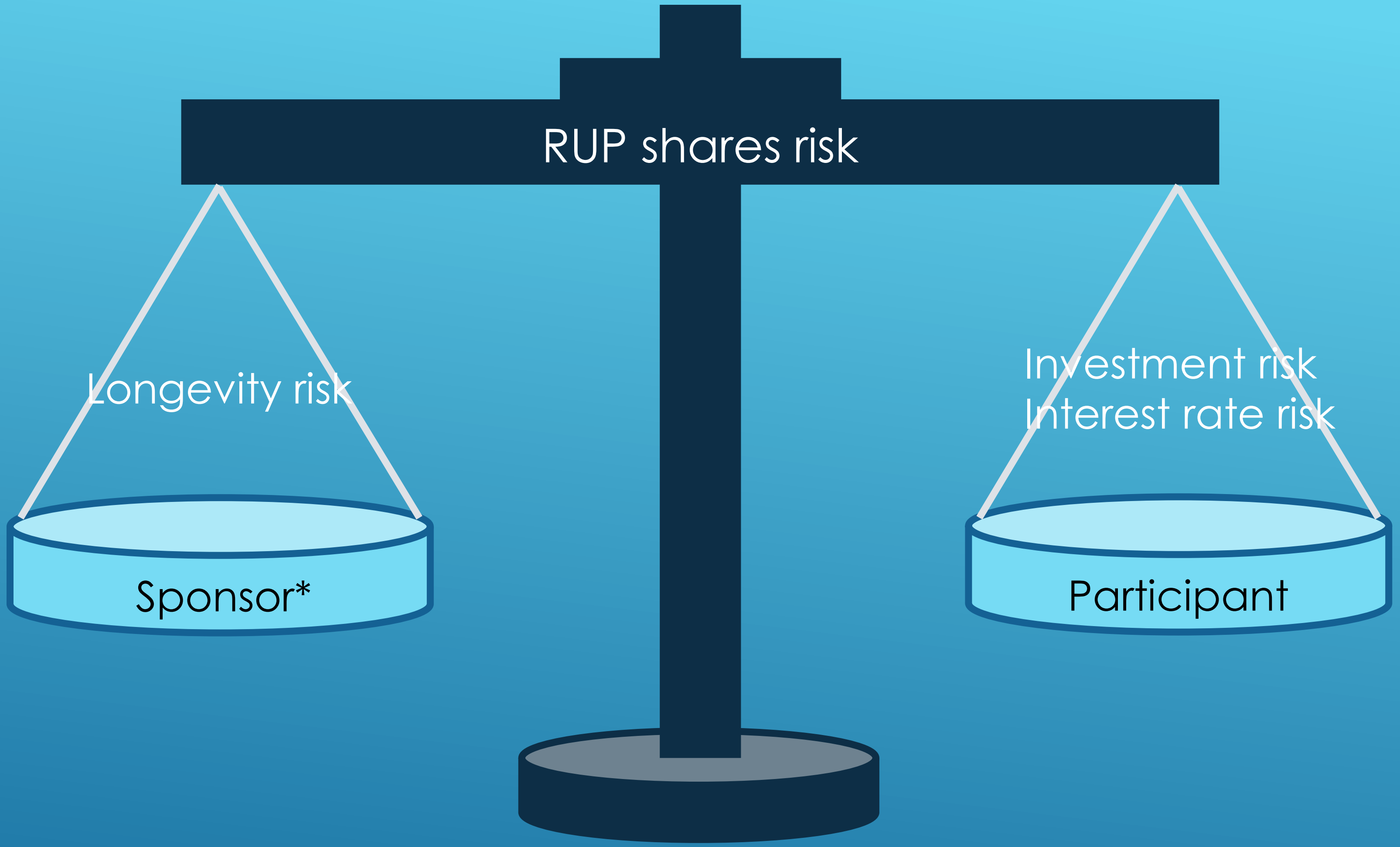
Effects on the employee are different than on the sponsor

CHANGE FROM DB TO DC SHIFTS THREE MAIN RISKS FROM EMPLOYER TO EMPLOYEE

- Traditional DB plans place all risks on sponsor
  - Most problems that plan sponsors have with DB plans are caused by investment and interest rate risk, not the longevity risk
- Switching to DC shifts all risks to the employee
  - Investment risk may be manageable for individual
  - Interest risk does not affect individual
  - Longevity risk is very difficult for individual to manage

RISK ALLOCATION IN TRADITIONAL PLANS

RETIREMENT UNITS PLAN – ALLOCATION OF RISK



*Sponsor could purchase a group annuity product to free itself from longevity risk

- Career accumulation plan
- Benefit credit is converted to variable annuity units at year-end purchase price of the units
- Units accumulate throughout an employee's career
  - Each year employee participates in the plan, more benefit credits are earned that are converted to "variable units" at the end of the year
- At NRD employee receives an annual retirement income based on number of "variable units" accumulated
- Annual income in retirement for each Units is the Units value at the end of the previous year

HOW DOES A RETIREMENT UNITS PLAN WORK?

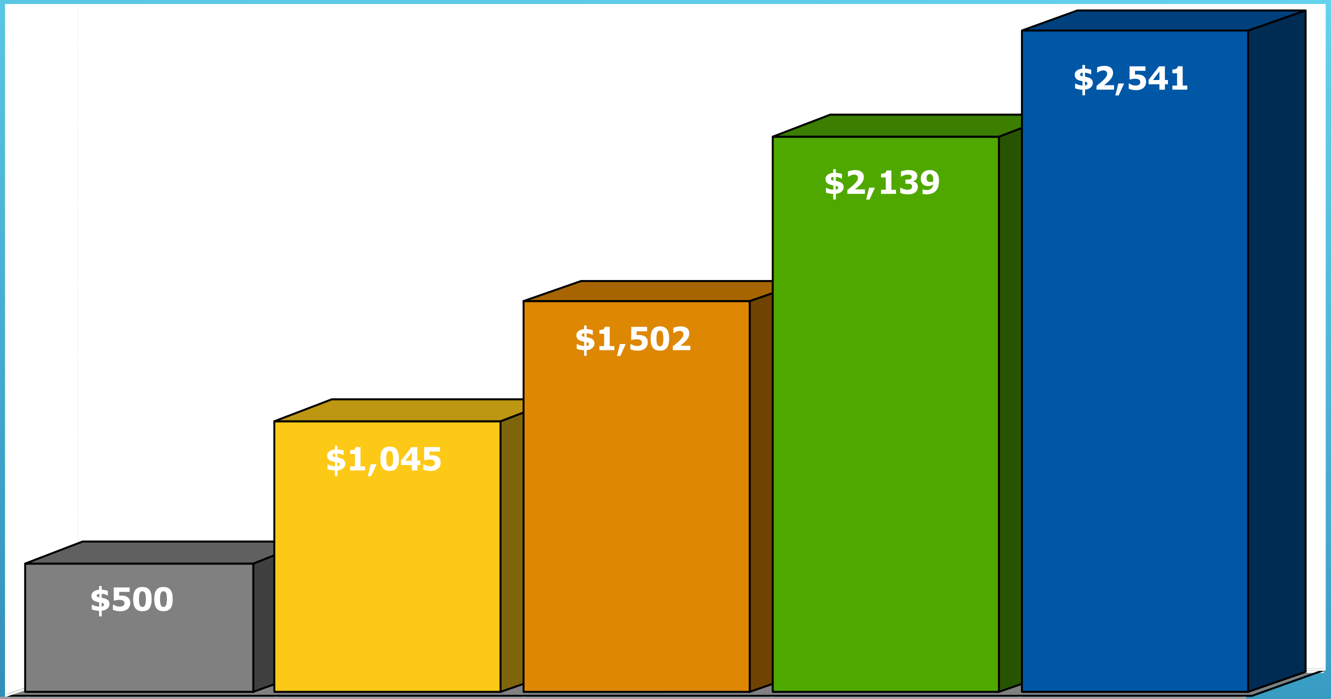
- Basic benefit formula is a traditional career average formula
  - Example: 1% of pay
  - Formula is applied to actual pay each year
  - Benefit is annual annuity at normal retirement age
    - Participant earns $50,000
    - Participant accrues a benefit = $500/year payable at 65
- The benefit is used to “buy” variable units at year-end Units value
  - Example: Variable Units value = $10
  - $500 benefit buys 50 variable units

HOW DOES A RETIREMENT UNITS PLAN WORK?

A variable Units is the right to an annual pension benefit equal to the Units value beginning at NRD

- Participant's 50 units would generate $500/year at retirement if the Units value remains $10
  - If Units value increases to $11, 50 units would generate $550/year at retirement
  - If Units value decreases to $9, 50 units would generate $450/year at retirement
- If Units value increases by average 2%/ year for 25 years
  - Units value is $16.41 when Participant retires at age 65
  - 50 variable units earned when age 40 then generate $820.50 annual pension income
- Units value can continue to fluctuate during retirement
  - If the value falls 1% to $16.25 during first year of retirement, benefit in year 2 will decline to $812.50

HOW DOES A RETIREMENT UNITS PLAN WORK?



Units earned	50	45	48	43	45
Accumulated units	50	95	143	186	231
End-of-year Units value	$10.00	$11.00	$10.50	$11.50	$11.00
Year-end pension income	**$500**	**$1,045**	**$1,502**	**$2,139**	**$2,541**

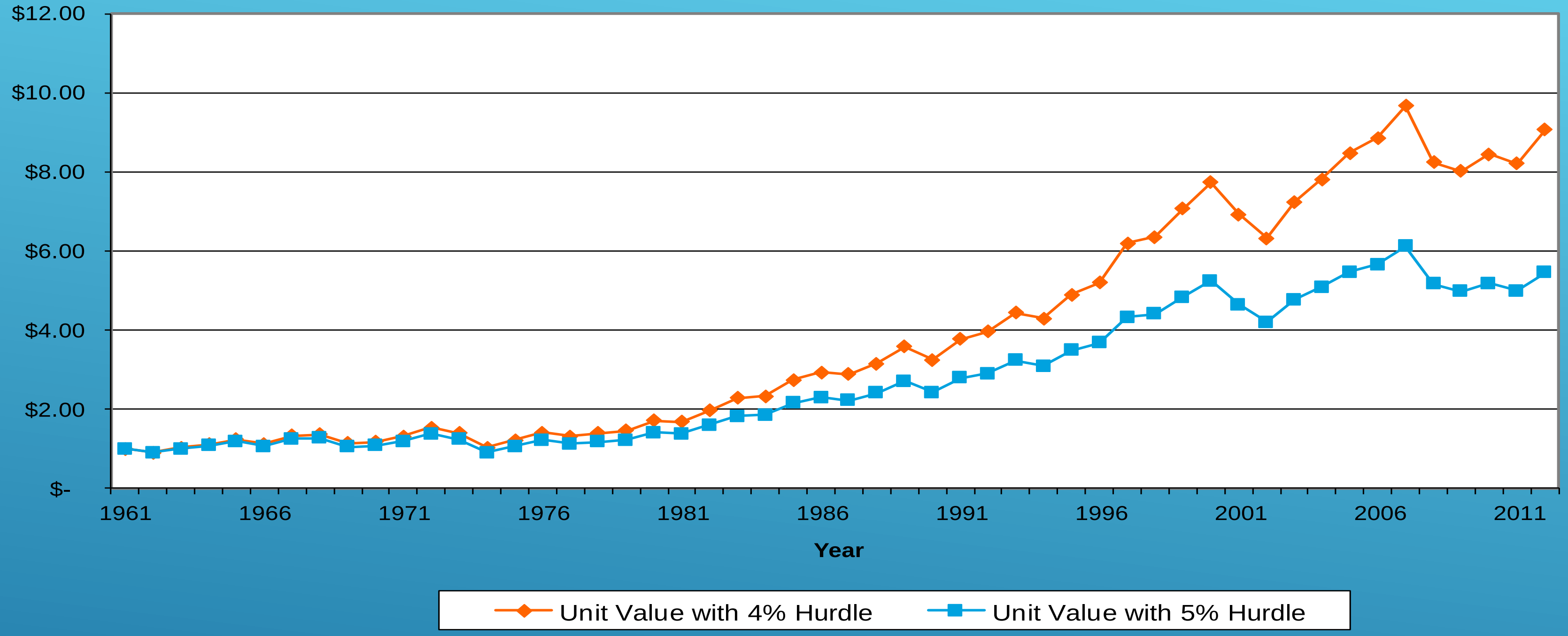
EXAMPLE - YEAR-END PENSION INCOME (UNITS X YEAR-END PRICE)

- Initial Units value can be any value
- Units value fluctuates annually based on the annual actual return of the pension fund (for the previous year) relative to an assumed return called the assumed interest rate (AIR)
    - If assets earn more than the AIR, Units values are increased
    - If assets earn less than the AIR, Units values are decreased
    - For example, if AIR is 5% and assets earn 8% (or 2%), Units values increase (or decrease) approximately 3%
- RUP is equivalent to the plan sponsor funding a fixed annuity determined at an interest rate equal to the AIR
    - Investment experience above or below the assumed interest rate is passed through to the participant through a change in the Units value

RETIREMENT UNITS PLAN
UNITS VALUE DETERMINATION

- The AIR is a plan provision, not an actuarial assumption
- AIR is a critical component of plan design
  - Higher rate lowers plan costs, but increases the likelihood that participants' benefits will decrease
  - Lower rate increases plan costs, but increases the likelihood that participants' benefits will increase
  - Setting the AIR at (or a little above) a reasonable risk-free rate of return enhances certain features
- Minimum permissible AIR is 5%

RETIREMENT UNITS PLAN ASSUMED INTEREST RATE

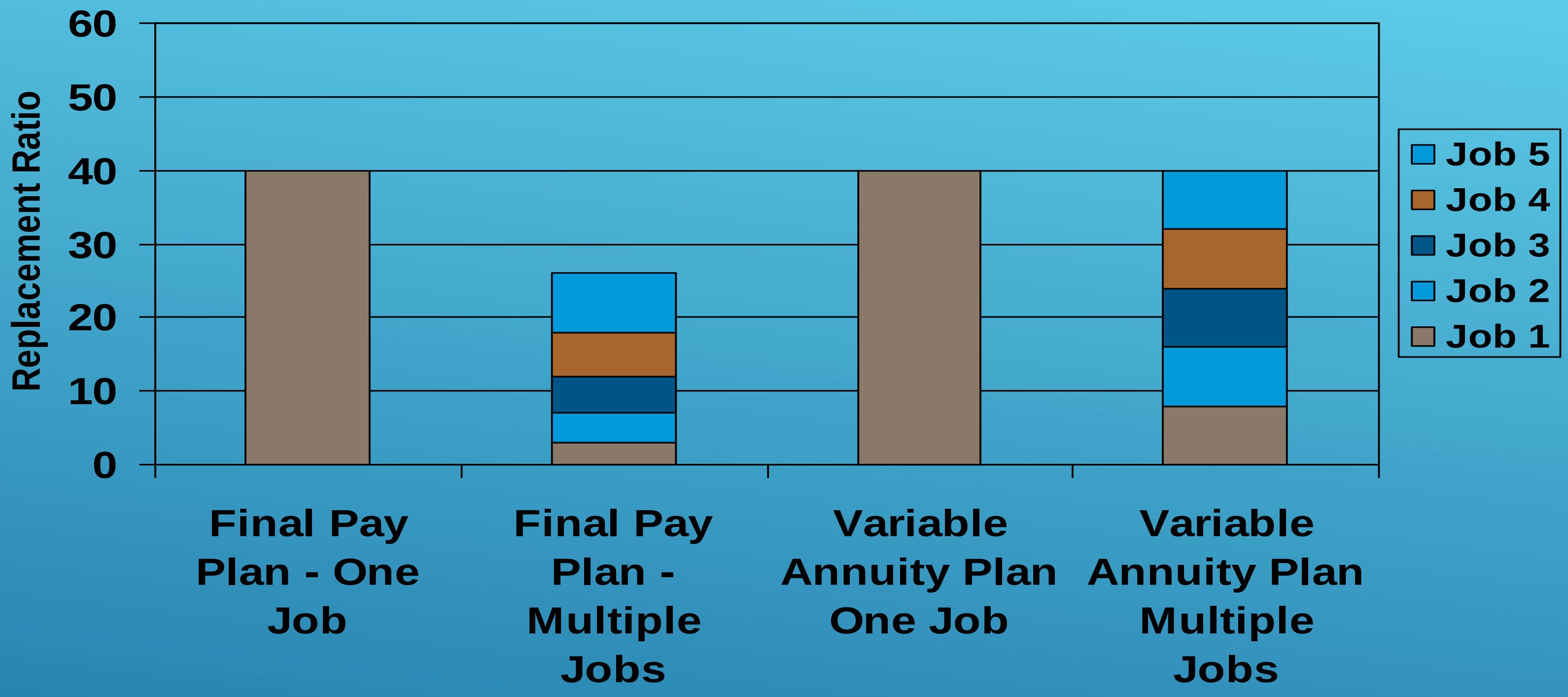


RETIREMENT UNITS PLAN – VALUE EFFECT OF CHANGING AIR

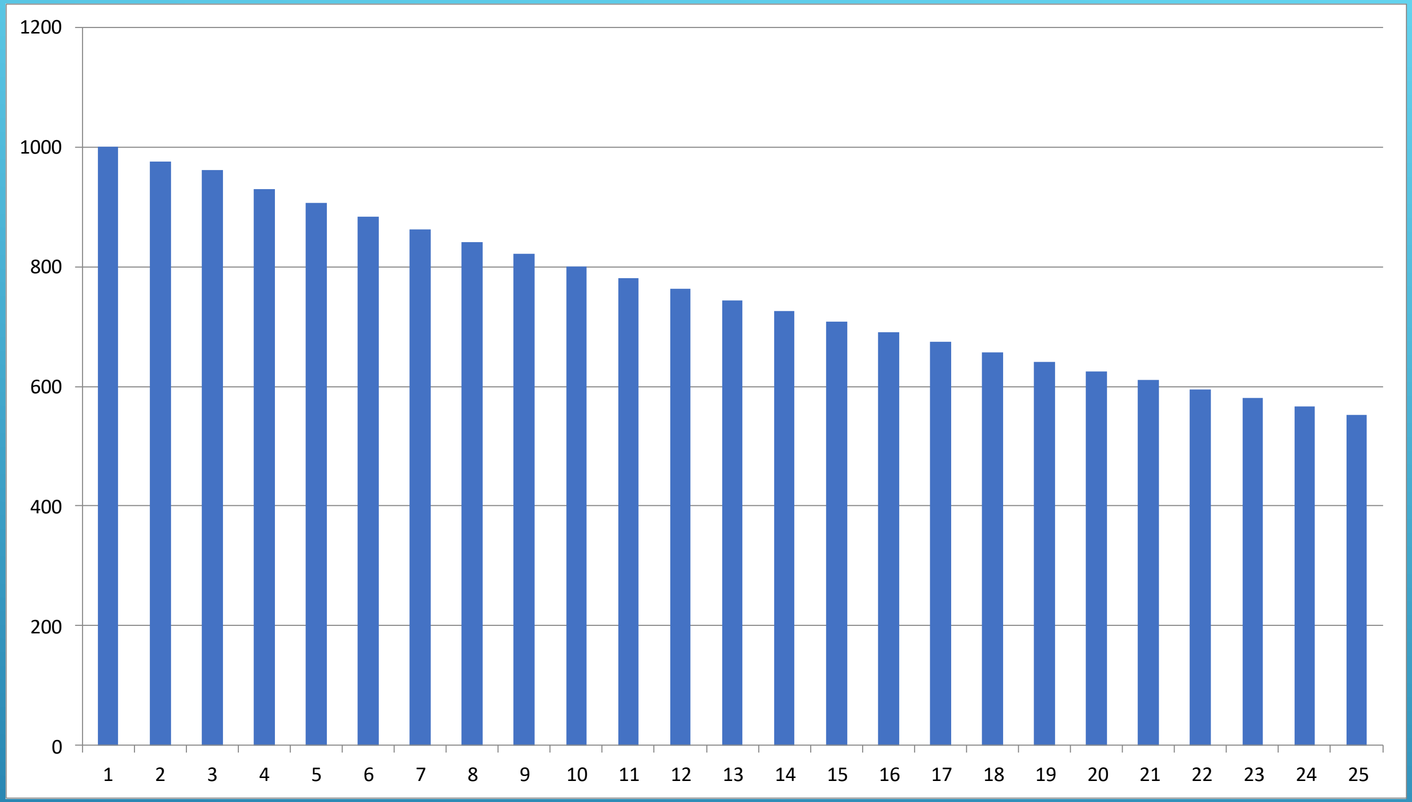
Variable units continue to appreciate and can be reallocated or exchanged by terminated vested participants

- Benefits continue to grow with investment experience, unlike traditional pension benefits
- Participants are not harmed by changing employment as in a final pay plan
- Benefits are not paid in lump sum or rollover, thus preventing leakage
- EBRI study indicates as much as 60% of early distributions are not rolled over

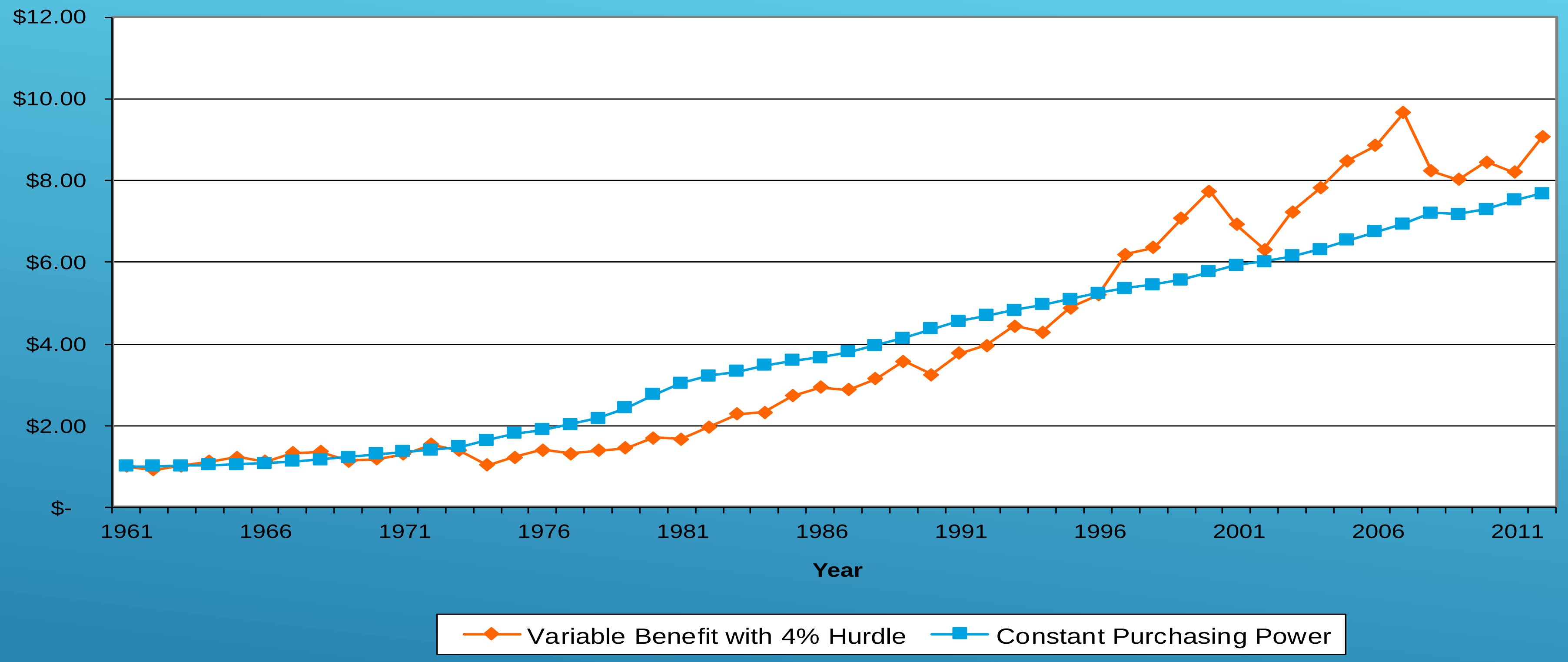
RETIREMENT UNITS PLAN PORTABILITY



RETIREMENT UNITS PLAN PORTABILITY



PURCHASING POWER OF LEVEL BENEFIT OF $1000 PER MONTH WITH 2.5% INFLATION



VARIABLE BENEFIT VERSUS PURCHASING POWER (1961-2012)

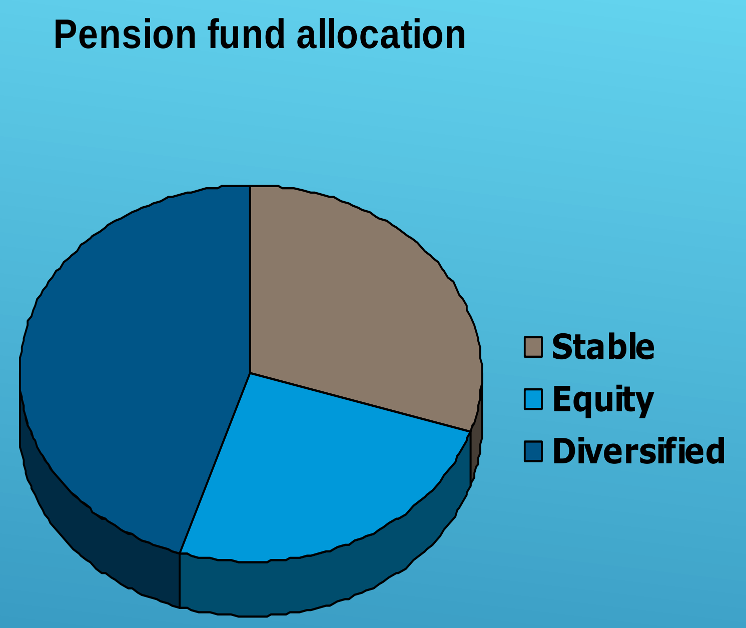
- Traditional Variable Plans have one investment fund that affects the benefits of all participants
- Young participants may prefer aggressive investments that will grow over time – they are relatively unaffected by current volatility
- Older participants and retirees may prefer stable investment to prevent volatility in the income on which they depend
- Fiduciaries must invest on behalf of all participants – but there is an inherent conflict
- Many sponsors are unwilling to adopt a traditional variable plan because of this conflict and the potential for volatile retiree benefits

THE ACHILLES HEEL OF TRADITIONAL VARIABLE PLAN*

*TO BE DETERMINED - RECENT TREASURY REGULATIONS HAVE LEFT THIS AN OPEN QUESTION.

Each Units fund represents a sub-account of the pension trust

- **Stable units:** High-quality short-to-intermediate term fixed income securities.
- **Equity units:** 100% equity investment, actively managed or an index fund.
- **Diversified units:** Generally, an actively managed fund where plan sponsor selects the investment managers and asset allocation.



RETIREMENT UNITS PLAN PARTICIPANT CHOICE IS POSSIBLE

- In traditional DB plans, matching assets and liabilities requires continual rebalancing of portfolio
- In RUP, assets and liabilities are always matched
- Benefits are portable
- Design can mimic final pay benefits
- Potential for purchasing power protection in retirement providing only annuities (no lump sums)
- Unfunded liabilities (surpluses) are less likely
  - Arise from demographic experience
  - Usually smaller in magnitude
  - Offset by frequent benefit changes, for example quarterly

RETIREMENT UNITS PLAN ASSET DRIVEN LIABILITIES

Donald Fuerst – Senior Pension Fellow, American Academy of Actuaries.

- Affordable Retirement Income Through Savings and Annuities. Prize winning paper of the Retirement 20/20 project sponsored by the Society of Actuaries, 2010.
- Risk Allocation in Retirement Plans: A Better Solution, Morgan Stanley Journal of Applied Corporate Finance, Winter 2006. Awarded the John Hansen Memorial Prize for best paper on employees benefits for 2006.
- A Proposal for Pension Funding Reform, Society of Actuaries, July 2005. Portions of this proposal were incorporated in the Pension Protection Act of 1996.
- Defined Benefit Plans: Still A Good Solution? Mercer Perspective, April 2004

ACKNOWLEDGEMENT